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NATIONAL DAM INSPECTION PROGRAM. MILLER POND DAM. (NDI-ID NUMBE--ETC(U)
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DELAWARE RIVER BASIN
MILLER POND DAM

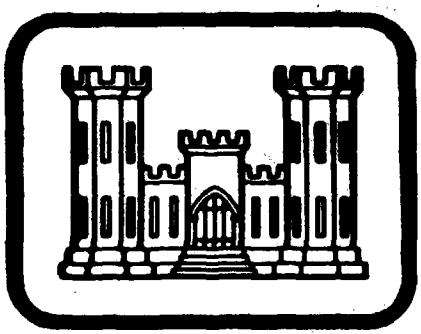
LEVEL

NDI NO. PA-00159
DER NO. 64-39

WAYNE COUNTY, PENNSYLVANIA

PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

ORIGINAL CONTAINS COLOR PLATES: ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE



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PREPARED FOR
DEPARTMENT OF THE ARMY
Baltimore District, Corps of Engineers
Baltimore, Maryland 21203

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BY

Berger Associates, Inc.
Harrisburg, Pennsylvania

JANUARY 1980

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PREFACE

This report has been prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the spillway design flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. The spillway design flood provides a measure of relative spillway capacity and serves as an aid in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

PHASE I REPORT

NATIONAL DAM INSPECTION PROGRAM

BRIEF ASSESSMENT OF GENERAL CONDITIONS
AND RECOMMENDATIONS

Name of Dam: MILLER POND DAM, NDI NO. PA-100159

State & State No.: PENNSYLVANIA, 64-39

County: WAYNE

Stream: TRIBUTARY TO JOHNSON CREEK

Date of Inspection: October 24, 1979

DACW31-80-C-0019

Based on the visual inspection, past performance and the available engineering data, the dam and its appurtenant structures appear to be in good condition.

In accordance with the Corps of Engineers' evaluation guidelines, the size classification of this dam is intermediate and the hazard classification is high. The spillway capacity combined with the available storage is sufficient to pass the PMF (Probable Maximum Flood) peak inflow without overtopping the dam. The spillway is therefore considered to be adequate. These calculations are based on a maximum stoplog elevation of 10 feet above the wetwell floor.

The following recommendations are presented for immediate action by the owner:

(1) That the upstream end of the outlet conduit be inspected,

(2) That the downstream section of the outlet conduit be inspected on an annual basis for signs of deterioration,

(3) That all brush be removed from the embankment and that the downstream wall be kept clear of all growth,

→ next page

(4) That a formal surveillance and downstream warning system be developed to be used during periods of high or prolonged precipitation,

(5) That a program be developed for regular inspection and maintenance.

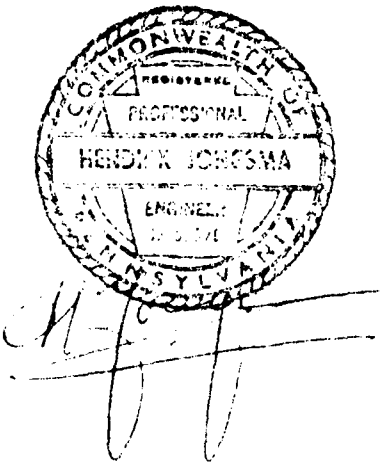
SUBMITTED BY:

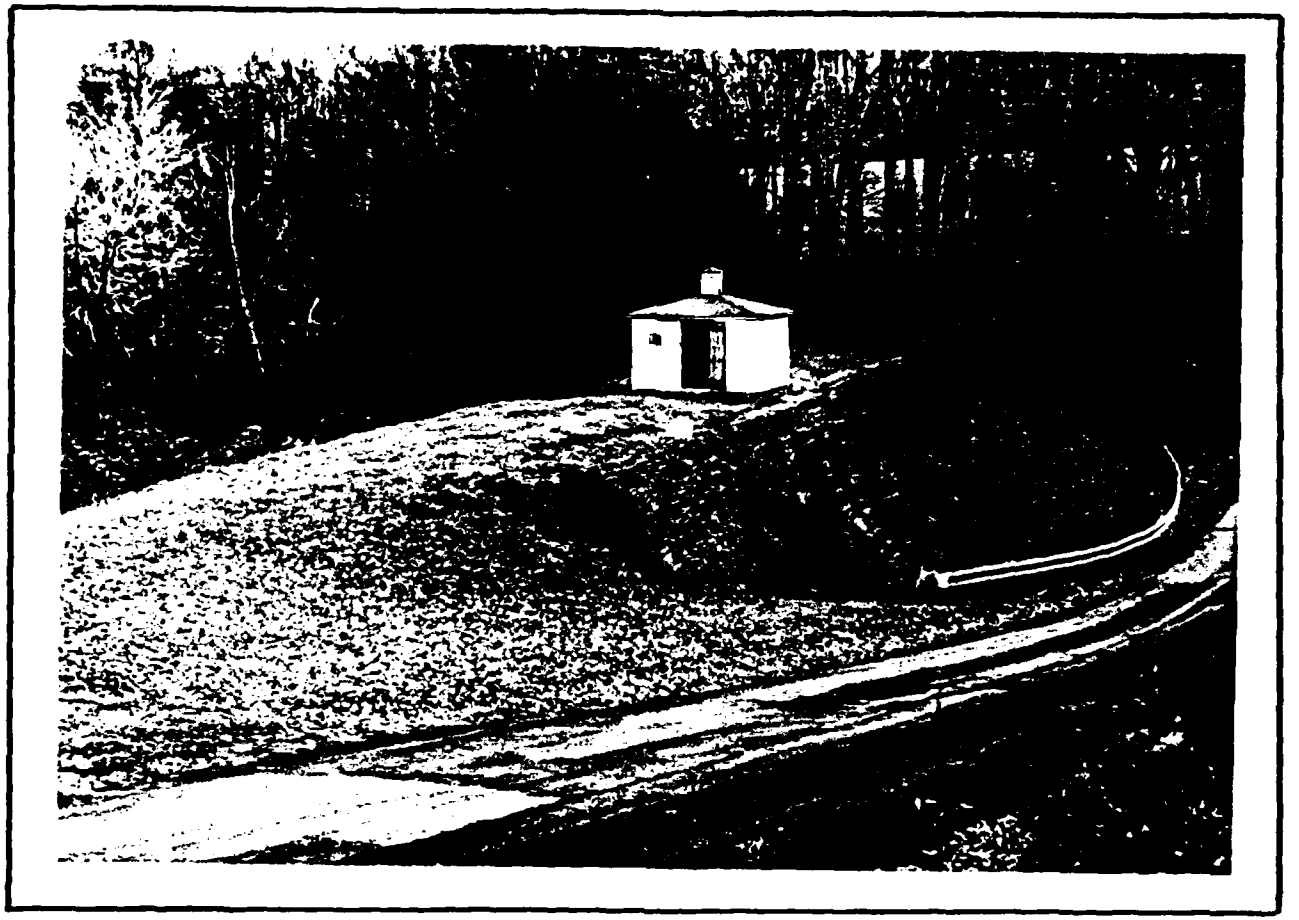
BERGER ASSOCIATES, INC.
HARRISBURG, PENNSYLVANIA

DATE: January 25, 1980

APPROVED BY:
JAMES W. PECK
Colonel, Corps of Engineers
District Engineer

DATE 25 Feb 1980





OVERVIEW

MILLER POND DAM

Photograph No. 1

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(6) PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

MILLER POND DAM

(NDI-ID [redacted]-PA-00159
DER-ID [redacted]-64-39)

Delaware River Basin, Wayne County, Pennsylvania.

Phase I Inspection Report.

SECTION 1 - PROJECT INFORMATION

1.1 GENERAL

A. Authority

The Dam Inspection Act, Public Law 92-367, authorized the Secretary of the Army, through the Corps of Engineers, to initiate a program of inspections of dams throughout the United States.

B. Purpose

The purpose of this inspection is to determine if the dam constitutes a hazard to human life and property.

1.2 DESCRIPTION OF PROJECT

A. Description of Dam and Appurtenances

Note: Project datum is not available. The reservoir elevation of 1479.0 on the U.S.G.S. quadrangle sheet was assumed to be normal pool elevation at the top of the stoplogs.

Miller Pond Dam consists of an earthfill embankment with a handlaid dry stone wall on the downstream face. This dry stone wall has an outside slope of .5H to 1V. The embankment length is about 260 feet and the maximum height of the fill is 25 feet above the original streambed. A conduit, open at its upstream end, connects the reservoir with a wetwell located near the centerline of the dam. The pool elevation is regulated with stoplogs in this well. Water flows over the stoplogs into a downstream conduit.

B. Location: Mount Pleasant Township, Wayne County
U.S.G.S. Quadrangle - Aldenville, Pa.
Latitude 41°-43.1', Longitude 75°-21.4'
Appendix E, Plates I & II

C. Size Classification: Intermediate (Height 25 feet, Storage 1649 acre-feet)

411003

D. Hazard Classification: High (Refer to Section 3.1.E)

E. Ownership: Pennsylvania Fish Commission
P.O. Box 1673
Harrisburg, PA 17105

F. Purpose: Public Fishing

G. Design and Construction History

According to a report made by the Pennsylvania Water Supply Commission, dated May 17, 1917, the dam was built 50 years or more earlier (1867 or prior) by the Delaware & Hudson Canal Company as a feeder for its canal. Deeds indicate that this land was transferred to the Delaware & Hudson Company in 1851. Records of the design or construction of this dam are not in existence. The canal was abandoned in the 1890's and the reservoir was drained. The wooden gate deteriorated and the reservoir was not used until the Pennsylvania Fish Commission repaired the conduit and installed stoplogs.

H. Normal Operating Procedures

The reservoir is used for public fishing and the pool level is maintained at normal elevation. All inflow above this level is discharged over the stoplogs. For fish management reasons, the pool is generally lowered about 1.5 feet in springtime.

1.3 PERTINENT DATA

A. Drainage Area (square miles)

From files:	1.2
Computed for this report:	1.0
Use:	1.0

B. Discharge at Dam Site (cubic feet per second)
See Appendix D for hydraulic calculations

Maximum known flood, May, 1942	66
Outlet works low-pool outlet (stoplogs)	None
Spillway capacity at pool Elev. 1493.1 (top of dam)	557

C. Elevation (feet above mean sea level)

Top of dam (low point)	1493.1

Spillway crest (normal stoplog elevation)	1479
Upstream portal invert	1469±
Downstream portal invert	1469±
Streambed at centerline of dam - estimate	1468.5

D. Reservoir (miles)

Length of normal pool	.67
Length of maximum pool	.78

E. Storage (acre-feet)

Spillway crest (Elev. 1479, top of stoplogs)	489
Top of dam (Elev. 1493.1)	1649

F. Reservoir Surface (acres)

Top of dam (Elev. 1493.1)	106.4
Spillway crest (Elev. 1479.0)	63.7

G. Dam (Refer to Plates I through III in Appendix A for plan and section).

Type: Earthfill with downstream handlaid dry stone wall.

Length: 260 feet.

Height: 25 feet.

Top Width: 21.6 feet.

Side Slopes: Upstream - 1.6H to 1V
Downstream - .5H to 1V

Zoning: None.

Cutoff: Unknown.

Grouting: Unknown, but not a practice in 1860.

H. Outlet Facilities

None.

I. Spillway

A five foot wide, 6.5' high arched masonry outlet tunnel runs through the embankment. A wetwell is located near the center line of the dam. Stoplogs in the wetwell control the flow through the tunnel.

J. Regulating Outlet

Stoplogs (See Section 1.3.I).

SECTION 2 - ENGINEERING DATA

2.1 DESIGN

Design data for the Miller Pond Dam were not available in the files of the Pennsylvania Department of Environmental Resources (PennDER) nor in the files of the owner. Only two drawings were in the owner's file. One drawing shows the property lines and a table with the storage capacity of the reservoir. The other drawing shows a general plan and typical sections. Parts of this drawing have been traced and are presented in Appendix E of this report.

2.2 CONSTRUCTION

Construction records were not located and probably are not in existence.

2.3 OPERATION

Records of operation are not maintained. A letter from the Pennsylvania Fish Commission states that the maximum recorded depth of flow on May 22, 1942 was 2.5 feet above normal pool. At that time, normal flow was 17.5 feet above bottom of dam or 8 feet below the dam crest elevation. A report dated 1917 states that the stone wall had deteriorated, bulged and caved. Field inspection, however, did not confirm this.

2.4 EVALUATION

A. Availability

Engineering data for Miller Pond Dam is very limited and consists of a descriptive report in PennDER's file and two drawings in the owner's file.

B. Adequacy

Since there is no design data, the evaluation of the safety of this dam has to be based on a visual inspection.

C. Operating Records

Operating records do not exist.

D. Post Construction Changes

There are no records of post construction changes. However, the entrance headwall of the conduit has been concreted and the outlet control has been changed from a wooden gate to stoplogs. The outlet conduit has a concrete slab.

SECTION 3 - VISUAL INSPECTION

3.1 FINDINGS

A. General

The general appearance of the Miller Pond Dam is good. The impounded lake and dam is owned by the Pennsylvania Fish Commission and is open to public fishing. The dam is an earthfill structure with a downstream handlaid dry stone gravity wall. A Township road is located about 50 feet downstream of the dam.

The visual inspection check list and sketches of the general plan and profile of the dam, as surveyed during the inspection, are presented in Appendix A of this report.

Mr. Jon Grindall, P.E., and Mr. Charles Rupert represented the Pennsylvania Fish Commission during the inspection. Photographs taken during the inspection are reproduced in Appendix C.

B. Embankment

The upstream slope of the embankment is rather steep (see Plate A-III) and has a considerable growth of brush. The slope is covered with loose stone and appears to be stable. At the left end of the embankment is a low area (refer to profile Plate A-II, Appendix A). The top of the dam is well maintained. The downstream section of the dam consists of a loose, handlaid dry stone wall with a slope of about 0.5H to 1V. The wall appears to be sound. Evidence of seepage was not detected. About twenty feet to the left of the outlet structure, a small depression was noticed in front of the wall. This depression has been there for many years.

C. Appurtenant Structures

The appurtenant structures of this dam consist of a sluiceway (spillway) with stoplogs located near the center of the embankment. The sluiceway consists of a narrow (5 feet) slot through the embankment formed by stone walls. The stoplogs form a wetwell at the upstream side which is filled by flow through a stone arch under the upstream embankment. The water flows over the stoplogs and discharges through a second stone arch culvert on the downstream side. This arch was inspected and appears in good condition. Water was leaking through and spilling over the stoplogs. It appeared also that some water was leaking through the stone adjacent to the stoplogs. Downstream of the arch culvert is a stone lined U-shaped channel about 20 feet long with a concrete bottom beyond which the stream flows through a third stone lined arch under a township road.

A locked wooded framed shed, in which the stoplogs can be stored, is located on the top of the embankment directly over the wet-well and the stoplog slot.

D. Reservoir Area

The area around the reservoir is mostly wooded with relatively flat slopes. The slopes are stable. Excessive siltation in the reservoir has not been a problem.

E. Downstream Channel

The downstream channel, beyond the above described township road and arch, is the natural streambed with wooded banks over the first 2,000 feet. The valley widens and consists mostly of cultivated lands. After another narrowing down of the valley, the creek flows through the village of Whites Valley and under State Route 670. There are about ten homes and a church located within the area which could be flooded if the dam would fail. The hazard to loss of life due to failure of the dam places this dam in the "High" hazard category.

3.2 EVALUATION

The overall evaluation of the facilities indicate that the dam is in good condition. Additional brush cutting is required and although the upstream slope is relatively steep, it appears to be stable. No bulges or displacement in the downstream walls were found. The outlet structure is narrow, but there is no history of clogging of the sluiceway.

SECTION 4 - OPERATIONAL PROCEDURES

4.1 PROCEDURES

Miller Pond is used as a public fishing facility. As a part of fish management, the pool level is lowered in the spring about 1.5 feet by removing 2 or 3 stoplogs.

4.2 MAINTENANCE OF DAM

The top of the dam is mowed at regular intervals and has an excellent appearance. Brush on the upstream slope is heavier than acceptable for an earthfill dam. The downstream dry stone wall does not need regular maintenance.

4.3 MAINTENANCE OF OPERATING FACILITIES

The operating facilities consist of the underwater arch opening to the wet well, the stoplogs and the discharge arch opening. The downstream section of the outlet is in good condition, but it is not known what the condition of the upstream section is.

4.4 WARNING SYSTEM

Mr. Jon Grindall, of the Pennsylvania Fish Commission, stated that his office is preparing an Operations & Maintenance Manual for these facilities. This manual will address the requirements for surveillance and a downstream warning system.

4.5 EVALUATION

The operational procedures for this dam should include frequent maintenance of the upstream slope by cutting brush at regular intervals. A formal surveillance plan and a system for downstream warning should be developed and implemented for use during periods of high or prolonged precipitation.

SECTION 5 - HYDROLOGY/HYDRAULICS

5.1 EVALUATION OF FEATURES

A. Design Data

The hydrologic and hydraulic analyses available from PennDER for Miller Pond Dam were not very extensive. The only information contained in the files was stage-storage data.

B. Experience Data

The greatest known flood at Miller Pond occurred in May 1942 when the water level in the pool rose to 2.5 feet above normal. That flood was passed without damage.

C. Visual Observations

On the date of the inspection, no conditions were observed that would indicate that the appurtenant structures of the dam could not operate satisfactorily during a flood event, until the dam is overtopped.

D. Overtopping Potential

Miller Pond Dam has a total storage capacity of 1649 acre-feet and an overall height of 25 feet, both referenced to the top of the dam. These dimensions indicate a size classification of "Intermediate". The hazard classification is "High" (see Section 3.1.E).

The recommended Spillway Design Flood (SDF) for a dam having the above classifications is the Probable Maximum Flood (PMF). For this dam, the PMF peak inflow is 2504 cfs (see Appendix D for HEC-1 inflow computations).

Comparison of the estimated PMF peak inflow of 2504 cfs with the estimated spillway discharge capacity of 557 cfs indicates that a potential for overtopping of the Miller Pond Dam exists.

An estimate of the storage effect of the reservoir and routing of the computed inflow hydrograph through the reservoir shows that this dam has the necessary storage available to pass the PMF without overtopping.

E. Spillway Adequacy

The intermediate size and high hazard categories, in accordance with the Corps of Engineers criteria and guidelines, indicates that the Spillway Design Flood (SPD) for this dam should be the Probable Maximum Flood (PMF).

Calculations show that the spillway discharge capacity and reservoir storage capacity combine to handle the full PMF with about 3.2 feet of freeboard (Refer to Appendix D).

Since the spillway discharge and reservoir storage capacity can pass the full PMF without overtopping, the spillway is considered to be adequate. This conclusion is based on the present condition with stoplogs placed to an elevation of ten feet above the floor in the wet well.

The hydrologic analysis for this investigation was based upon existing conditions of the watershed. The effects of future development were not considered.

SECTION 6 - STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

A. Visual Observation

1. Embankment

The upstream slope of the embankment is relatively steep, but appears to be stable and has adequate stone protection. The downstream sloped stone wall does not show any signs of distress and is apparently in good condition. There were no signs of seepage or leakage through the wall or downstream of its toe indicating a good impervious embankment. The low area in the embankment profile has a good grass mat cover and any flow of water over this area is diverted away from the toe of the dam.

2. Appurtenant Structures

The entrance conduit to the wetwell is under water and could not be inspected. A concrete headwall is visible, but it is unknown how far the concrete lining is extended and in what condition it is. The wet well and stoplogs appeared to be in good condition as was the outlet conduit. This conduit has a concrete base with stone walls and arch.

B. Design and Construction Data

Actual design and construction data is not available for evaluation. A report, dated 1917, states that the downstream face was deteriorated and bulging. The recent inspection did not confirm this.

C. Operating Records

Formal operating records have not been maintained for this dam. There is no information to evaluate its performance. The original wooden gate and wooden base in the conduit have been replaced.

D. Post Construction Changes

The only post construction change which is evident is the replacement of the wooden gate with stoplogs and changes to the entrance conduit.

E. Seismic Stability

This dam is located in Seismic Zone 1 and it is considered that the static stability is sufficient to withstand minor earthquake-induced dynamic forces. No studies or calculations have been made to confirm this assumption.

SECTION 7 - ASSESSMENT AND RECOMMENDATIONS

7.1 DAM ASSESSMENT

A. Safety

The visual inspection, the review of available design data and the operational history of Miller Pond Dam indicate that this dam is in good condition.

In accordance with the guidelines of the Corps of Engineers, the hydrologic and hydraulic computations indicate that the facility has the capacity for passing the PMF without overtopping the dam. The spillway is considered to be adequate with the stoplogs placed to an elevation of ten feet above the floor of the wetwell.

B. Adequacy of Information

The information available in the PennDER files and from the owner, together with the observed conditions at the site are considered sufficiently adequate for making a reasonable assessment of this facility.

C. Urgency

The recommendations presented as a result of this inspection should be implemented without delay.

D. Necessity for Additional Studies

Additional studies are not indicated at this time.

7.2 RECOMMENDATIONS

In order to assure the continued satisfactory operation of this dam, the following recommendations are presented for implementation by the owner:

1. That the upstream end of the outlet tunnel be inspected.

2. That the downstream section of the outlet conduit be inspected on an annual basis for possible deterioration of the concrete floor.

3. That all brush be removed from the embankment and that the downstream face of the stone wall be kept clear of growth.

4. That a formal surveillance and downstream warning system be developed to be used during periods of heavy or prolonged precipitation.

5. That a program be developed for regular inspection and maintenance.

APPENDIX A

CHECKLIST OF VISUAL INSPECTION REPORT

CHECK LIST

PHASE I - VISUAL INSPECTION REPORT

PA DER # 64-39 NDI NO. PA-00 159

NAME OF DAM MILLER POND HAZARD CATEGORY High

TYPE OF DAM Earthfill with downstream masonry wall

LOCATION Mount Pleasant TOWNSHIP Wayne COUNTY, PENNSYLVANIA

INSPECTION DATE 10/24/79 WEATHER Cloudy, cool TEMPERATURE 40's

INSPECTORS: R.V. Houseal (Recorder) OWNER'S REPRESENTATIVE(s):

H. Jongsma Jon Grindall

R. Shireman Chuck Rupert

A. Bartlett

NORMAL POOL ELEVATION: 1479 U.S.G.S. AT TIME OF INSPECTION:

BREAST ELEVATION: 1493.1 POOL ELEVATION: 1479+

1479.0

SPILLWAY ELEVATION: sluiceway with stoplogs TAILWATER ELEVATION: None

MAXIMUM RECORDED POOL ELEVATION: 1489.0

GENERAL COMMENTS:

Outlet controls flow from reservoir. This facility is a recreation lake for fishing purposes.

NDI NO. PA-00 159

VISUAL INSPECTION
EMBANKMENT

	OBSERVATIONS AND REMARKS
A. SURFACE CRACKS	None evident.
B. UNUSUAL MOVEMENT BEYOND TOE	None except small depression to left of outlet.
C. SLOUGHING OR EROSION OF EMBANKMENT OR ABUTMENT SLOPES	None.
D. ALIGNMENT OF CREST: HORIZONTAL: VERTICAL:	Horizontal okay. Vertical - See Profile Plate A-II.
E. RIPRAP FAILURES	Riprap - dumped stone - loose. No failures evident.
F. JUNCTION EMBANKMENT & ABUTMENT OR SPILLWAY	Abutments meet original ground on right and left.
G. SEEPAGE	None observed.
H. DRAINS	None.
J. GAGES & RECORDER	None.
K. COVER (GROWTH)	Top - mowed grass. Upstream - steep with brush growth & Riprap Downstream - sloped stone wall.

NDI NO. PA-00 159

VISUAL INSPECTION
OUTLET WORKS

	OBSERVATIONS AND REMARKS
A. INTAKE STRUCTURE	Concrete headwall. Underwater, not observed.
B. OUTLET STRUCTURE	Through controlled wetwell
C. OUTLET CHANNEL	Stone walls and bottom leading under roadway thru stone culvert.
D. GATES	Stoplogs.
E. EMERGENCY GATE	None.
F. OPERATION & CONTROL	Small (1.5 ft.) drawdown sometimes in spring for fish management.
G. BRIDGE (ACCESS)	None - control house on breast of dam over wetwell.

NDI NO. PA-00 159

VISUAL INSPECTION
SPILLWAY

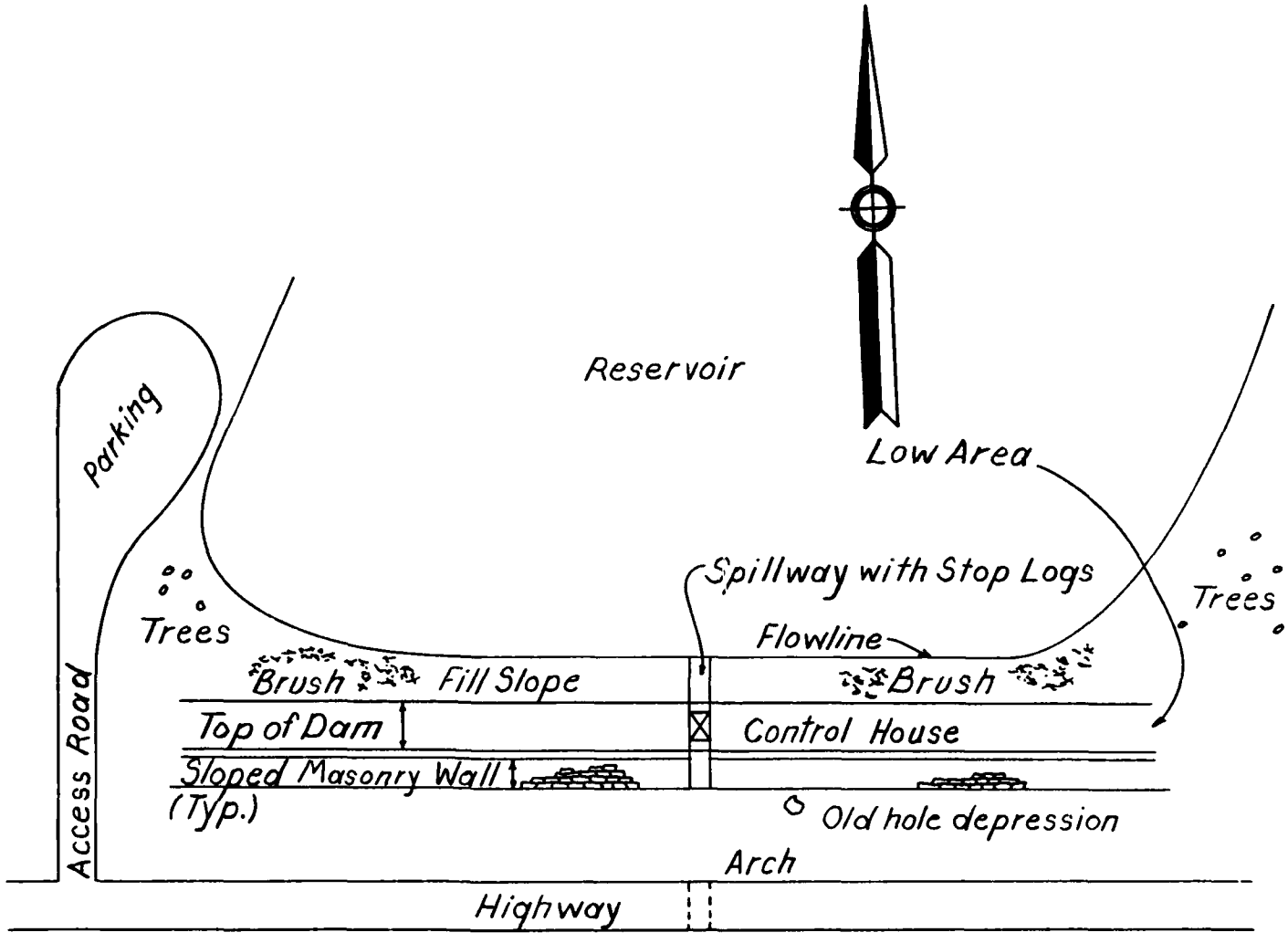
	OBSERVATIONS AND REMARKS
A. APPROACH CHANNEL	None Note: To the left of the dam is a low area.
B. WEIR: Crest Condition Cracks Deterioration Foundation Abutments	None
C. DISCHARGE CHANNEL: Lining Cracks Stilling Basin	From outlet structure (See A-3)
D. BRIDGE & PIERS	None
E. GATES & OPERATION EQUIPMENT	None (stoplogs in wetwell)
F. CONTROL & HISTORY	None

NDI NO. PA-00 159

VISUAL INSPECTION

	OBSERVATIONS AND REMARKS
INSTRUMENTATION Monumentation	None
Observation Wells	None
Weirs	None
Piezometers	None
Staff Gauge	None
Other	None
RESERVOIR Slopes	Wooded & cultivated lands - stable. 3:1 to 4:1 near water's edge. Slightly steeper beyond 200'±.
Sedimentation	None reported
Watershed Description	Wooded around reservoir, cultivated land in upper region of watershed (50%)
DOWNSTREAM CHANNEL Condition	Natural Stream Concrete ruins downstream from roadway crossing
Slopes	Wooded overbanks, stable.
Approximate Population	35-40 residents
No. Homes	10 homes & church and roadway bridge within 7000 feet of dam

MILLER POND DAM
PA-00159
INSPECTION SURVEY
PLATE A-I



SCHEMATIC PLAN

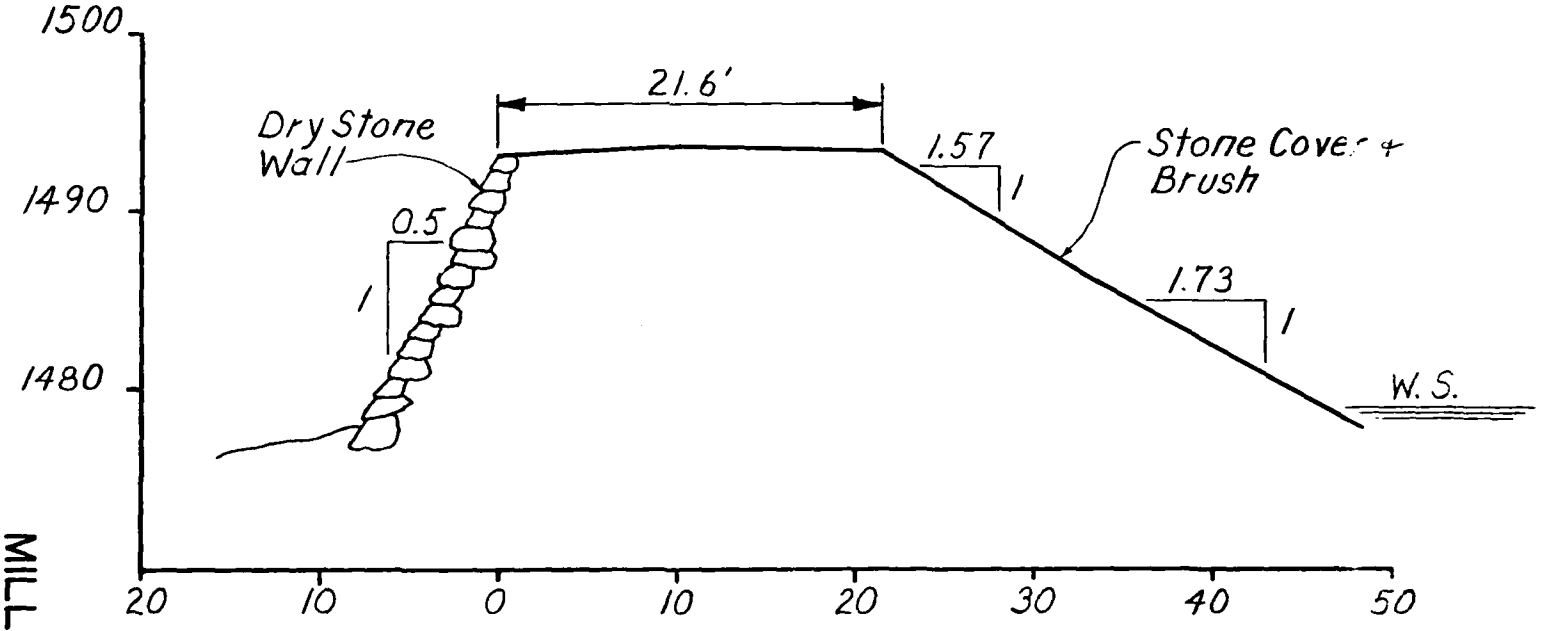
Surveyed 10-24-79

MILLER POND DAM

PA.-00159

INSPECTION SURVEY

PLATE A-II



EMBANKMENT SECTION

MILLER POND DAM
PA.-00159
INSPECTION SURVEY
PLATE A-III

Surveyey 10-24-74

APPENDIX B

CHECKLIST OF ENGINEERING DATA

CHECK LIST
ENGINEERING DATA

PA DER # 64-39 NDI NO. PA-00159

NAME OF DAM MILLER POND DAM

ITEM	REMARKS
AS-BUILT DRAWINGS	None.
REGIONAL VICINITY MAP	U.S.G.S. Quadrangle - Aldenville, PA. See Plate II, Appendix E.
CONSTRUCTION HISTORY	Not available. Constructed by Delaware & Hudson Canal Company around 1860.
GENERAL PLAN OF DAM	See Appendix E, Plate III, which was traced from a drawing in the files of the owner.
TYPICAL SECTIONS OF DAM	Not available.
OUTLETS: PLAN DETAILS CONSTRAINTS DISCHARGE RATINGS	See Appendix E, Plate III.

ENGINEERING DATA

ITEM	REMARKS
RAINFALL & RESERVOIR RECORDS	No records.
DESIGN REPORTS	None.
GEOLOGY REPORTS	None.
DESIGN COMPUTATIONS: HYDROLOGY & HYDRAULICS DAM STABILITY SEEPAGE STUDIES	None.
MATERIALS INVESTIGATIONS: BORING RECORDS LABORATORY FIELD	None.
POST CONSTRUCTION SURVEYS OF DAM	Appendix E, Plate III.
BORROW SOURCES	Unknown.

ENGINEERING DATA

ITEM	REMARKS
MONITORING SYSTEMS	None.
MODIFICATIONS	Wooden gate replaced by stoplogs.
HIGH POOL RECORDS	May 22, 1942: 2.5 feet above normal pool Elev. 1489.0
POST CONSTRUCTION ENGINEERING STUDIES & REPORTS	None.
PRIOR ACCIDENTS OR FAILURE OF DAM Description: Reports:	None recorded.
MAINTENANCE & OPERATION RECORDS	Not maintained.
SPILLWAY PLAN, SECTIONS AND DETAILS	None.

NDI NO. PA-00159

ENGINEERING DATA

ITEM	REMARKS
OPERATING EQUIPMENT, PLANS & DETAILS	None.
CONSTRUCTION RECORDS	Not available.
PREVIOUS INSPECTION REPORTS & DEFICIENCIES	Inspection reports by Penn DER. No deficiencies.
MISCELLANEOUS	

NDI NO. PA-00159

CHECK LIST
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

DRAINAGE AREA CHARACTERISTICS: Wooded (50%) & Agriculture (50%)

ELEVATION:

TOP NORMAL POOL & STORAGE CAPACITY: Elev. 1479 Acre-Feet : 489

TOP FLOOD CONTROL POOL & STORAGE CAPACITY: Elev. 1493.1 Acre-Feet : 1649

MAXIMUM DESIGN POOL: Elev. 1493.1

TOP DAM: Elev. 1493.1

SPILLWAY:

a. Elevation 1479

b. Type Broad crested weir (stoplogs)

c. Width 5'

d. Length

e. Location Spillover Near center of embankment

f. Number and Type of Gates None

OUTLET WORKS:

a. Type None

b. Location

c. Entrance inverts

d. Exit inverts

e. Emergency drawdown facilities Stoplogs

HYDROMETEOROLOGICAL GAGES:

a. Type None

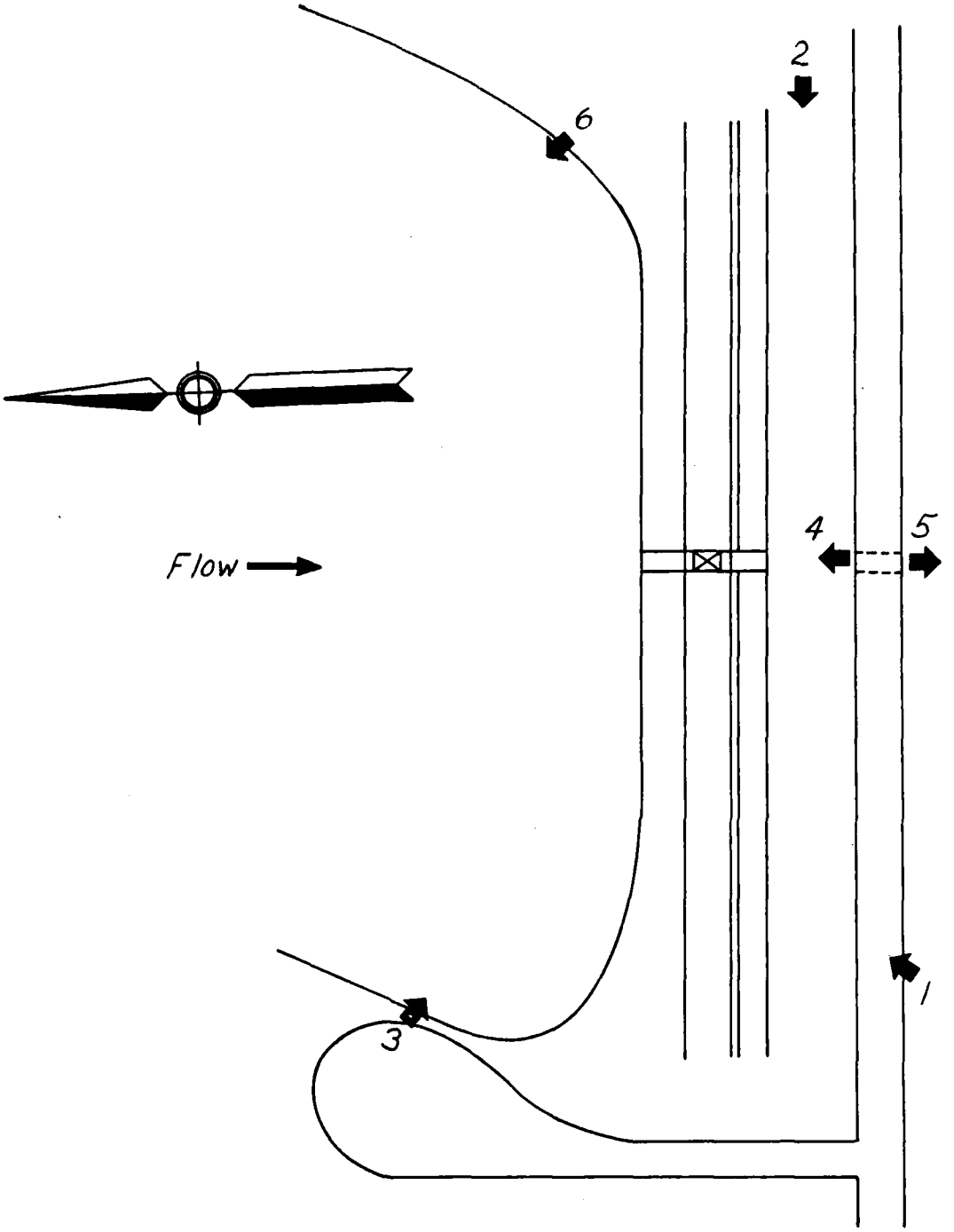
b. Location

c. Records

MAXIMUM NON-DAMAGING DISCHARGE: 557 cfs

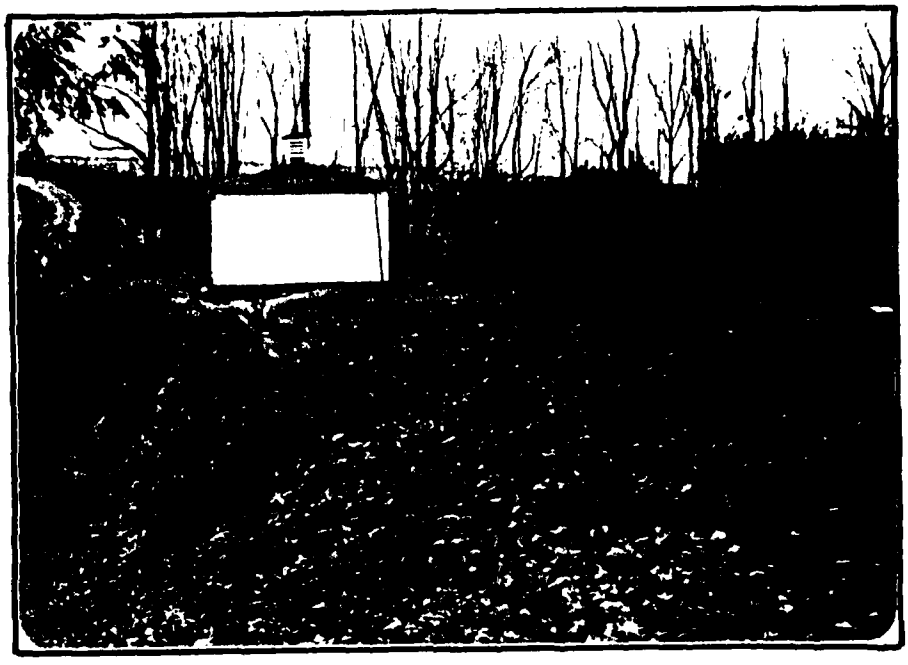
APPENDIX C

PHOTOGRAPHS



MILLER POND DAM
PA.-00159
KEY MAP OF PHOTOGRAPHS

PLATE C-I



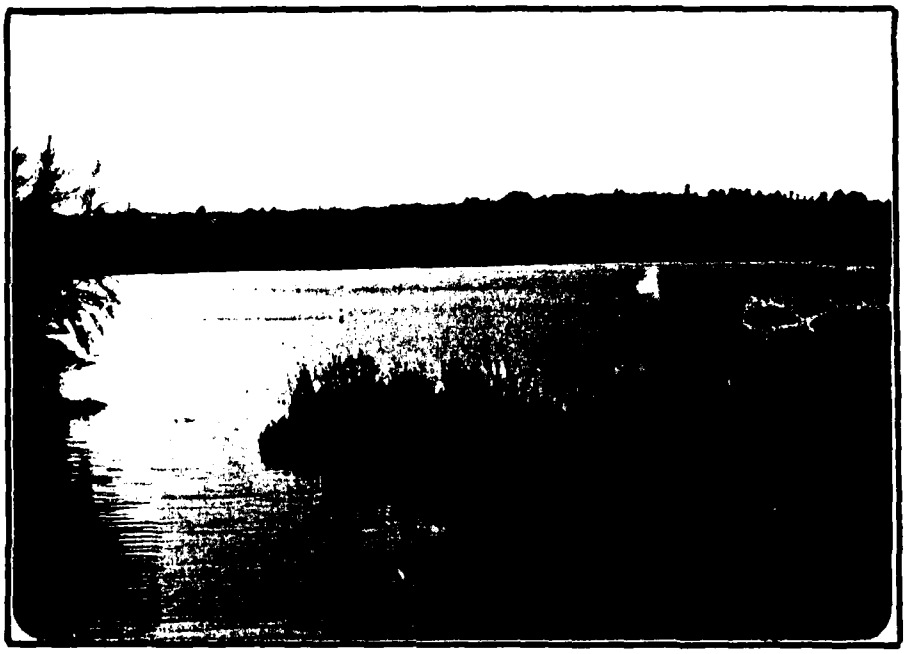
TOP OF DAM WITH STOPLOG CONTROL HOUSE - NO. 2

UPSTREAM SLOPE - NOTE CONCRETE CONDUIT HEADWALL - NO. 3

CONDUIT OUTLET - NO. 4

STREAM DOWNSTREAM OF HIGHWAY - NO. 5

PA-00159
Plate C-III



RESERVOIR AREA - NO. 6

PA-00159
Plate C-IV

APPENDIX D

HYDROLOGY AND HYDRAULIC CALCULATIONS

SUMMARY DESCRIPTION
OF
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION

The hydrologic and hydraulic evaluation for this inspection report has employed computer techniques using the Corps of Engineers computer program identified as the Flood Hydrograph Package (HEC-1) Dam Safety Version.

The program has been designed to enable the user to perform two basic types of hydrologic analyses: (1) the evaluation of the overtopping potential of the dam, and (2) the capability to estimate the downstream hydrologic-hydraulic consequences resulting from assumed structural failures of the dam. A brief summary of the computation procedures typically used in the dam overtopping analysis is shown below.

- Development of an inflow hydrograph to the reservoir.
- Routing of the inflow hydrograph(s) through the reservoir to determine if the event(s) analyzed would overtop the dam.
- Routing of the outflow hydrograph(s) of the reservoir to desired downstream locations. The results provide the peak discharge and maximum stage of each routed hydrograph at the outlet of the reach.

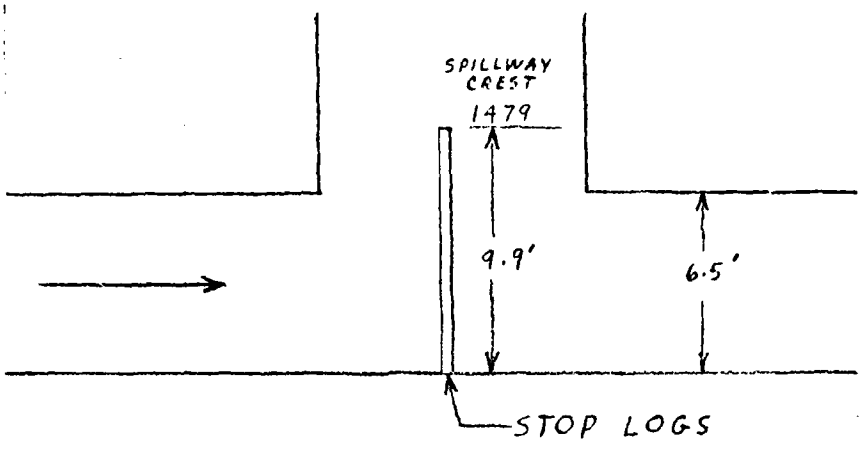
The output data provided by this program permits the comparison of downstream conditions just prior to a breach failure with that after a breach failure and the determination as to whether or not there is a significant increase in the hazard to loss of life as a result of such a failure.

The results of the studies conducted for this report are presented in Section 5.

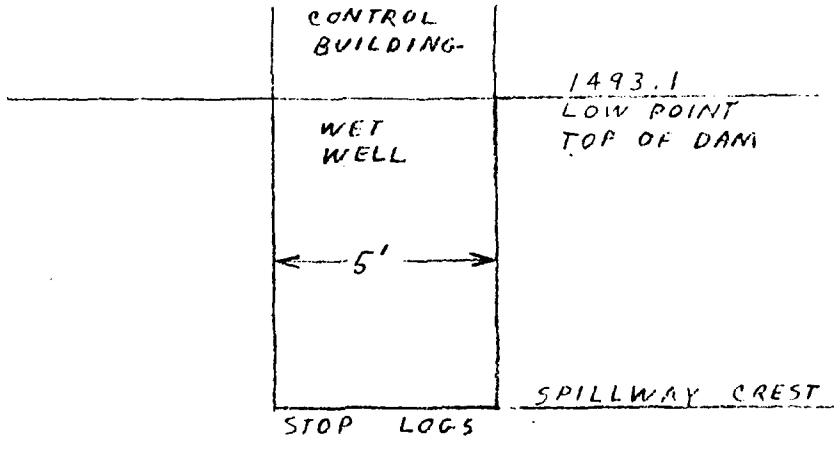
For detailed information regarding this program refer to the Users Manual for the Flood Hydrograph Package (HEC-1) Dam Safety Version prepared by the Hydrologic Engineering Center, U.S. Army Corps of Engineers, Davis, California.

BY _____ DATE 1/23/79 BERGER ASSOCIATES SHEET NO
CHKD. BY _____ DATE _____ PROJECT
SUBJECT MILLER POND

SPILLWAY



C = 3.32 (KINGS HDBK.)



MAXIMUM KNOWN FLOOD AT DAMSITE

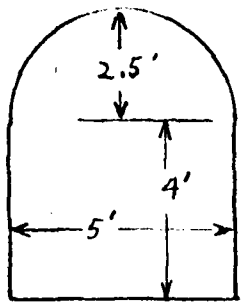
THE MAXIMUM KNOWN FLOOD AT THE MILLER POND DAM OCCURRED IN MAY 1942 WHEN THE WATER LEVEL IN THE POOL REACHED AN ELEVATION 2.5 FEET ABOVE NORMAL.

$$Q = CLH^{3/2}$$

$$= 3.32 \times 5 \times (2.5)^{1.5} = 66 \text{ CFS}$$

BY ... DATE 4/21/29 BERGER ASSOCIATES SHEET NO.
CHKD. BY ... DATE ... PROJECT
SUBJECT ... MILLER POND

SPILLWAY



OUTLET TUNNEL DOWNSTREAM OF STOP LOGS
ASSUMED SAME SIZE AND S. ' UPSTREAM

LENGTH UPSTREAM = 24'

MASONRY LINED N = .025
(KINGS HDBK)

$$AREA = (\pi D^2/4)/2 + (4\times5)$$
$$= (\pi \times 25/4/2) + 20 = 29.8 \text{ S.F.}$$

$$W.P. = \pi D/2 + 4 + 4 + 5 = 20.85'$$

$$R = A/P = 1.429$$
$$R^{2/3} = 1.2687$$

$$CENTROID = 6.5 - (((.575587 \times 2.5 \times \frac{\pi D^2}{4\times2}) + (4\times5\times4.5))/29.8)$$
$$= 3' \text{ ABOVE BOTTOM}$$

MAXIMUM DISCHARGE WITHOUT SUBMERGED WEIR

$$Q = CA\sqrt{2gH} \qquad C = 0.6$$
$$= 0.6 \times 29.8 \times (2\times32.2\times(9.9-3))^{.5}$$
$$= 377 \text{ CFS}$$

BY RLS DATE 11/28/79 **BERGER ASSOCIATES** SHEET NO. 3 OF 8
CHKD. BY DATE PROJECT 29650
SUBJECT MILLER POND

SPILLWAY RATING

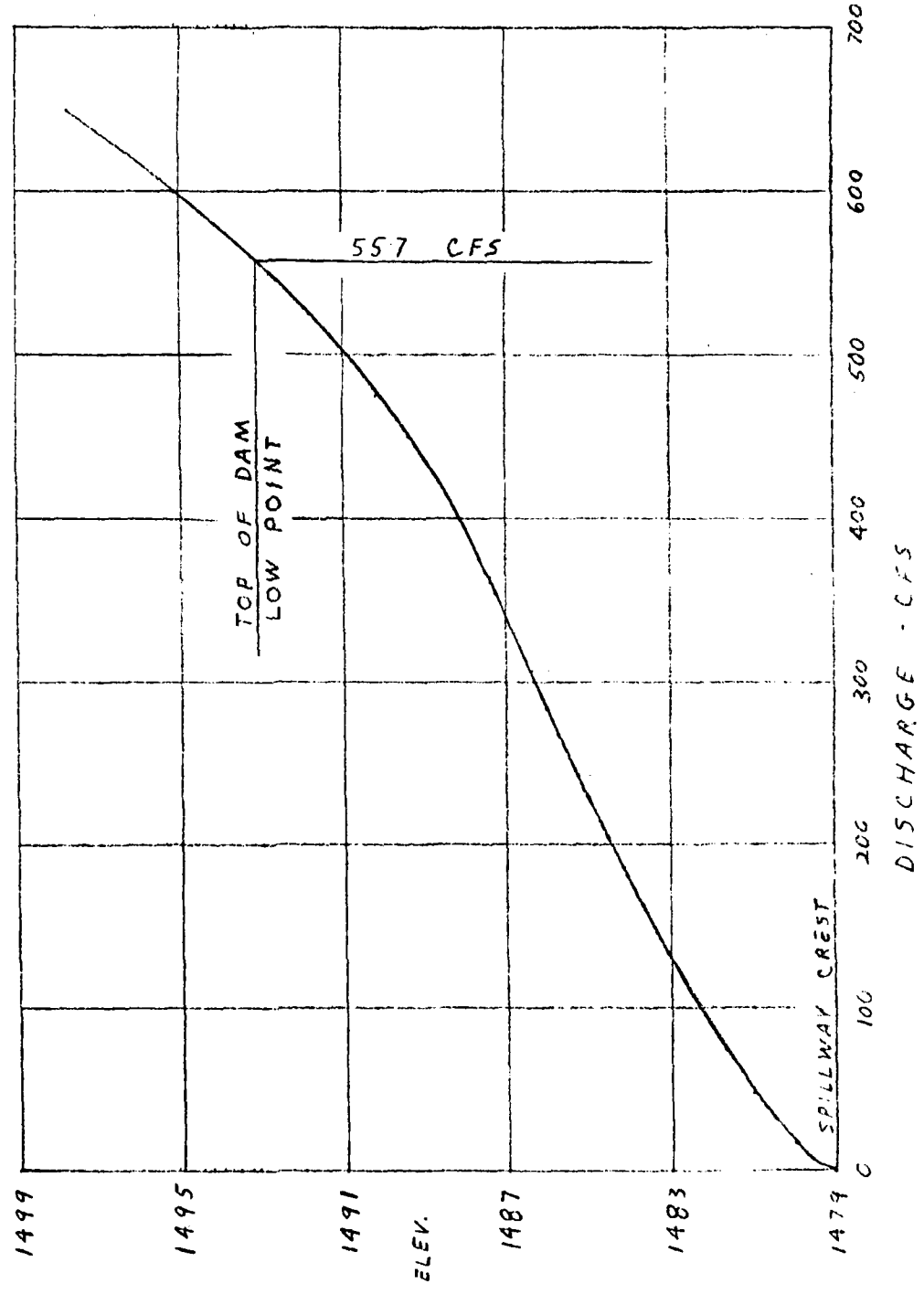
H_W = HEAD ON WEIR (FT.)
$Q = C L H^{3/2}$ (ASSUMED FOR SUBMERGED CONDITION)
H_T = HEAD LOSS THROUGH TUNNEL* = $(Q \cdot N/(1.486 AR^{2/3}))^2 \times L$
H_O = HEAD LOSS THROUGH ORIFICE* = $(Q/CA)^2/2g$
H_D = HEAD ON WEIR DOWNSTREAM SIDE = $H_O + 3 - 9.9$
H_{WA} = HEAD ON WEIR (ASSUMED FOR SUBMERGED CONDITION)
C' = DISCHARGE CORRECTION COEFFICIENT, FROM TABLE 13 WATER MEASUREMENT MANUAL, BUREAU OF RECLAMATION
Q_E = EQUIVALENT Q OVER WEIR = Q/C'
H_W = COMPUTED HEAD ON WEIR = $(Q/CL)^{2/3}$
POOL ELEV = 1479 + H_W + H_T

H_W	Q CFS	H_T	H_O	H_D	H_{WA}	H_D/H_{WA}	C'	Q_E	H_W	POOL ELEV.
.5	6	0								1479.5
1	17	0								1480
1.5	31	0								1480.5
2	47	0								1481
3	86	0								1482
4	133	.1								1483.1
5	186	.2								1484.2
6	244	3								1485.3
7	307	.4								1486.4
8	375	.7								1487.7
	400	.8	7.8	.9	8.3	.11	1.005	398	8.3	1488.1
	425	.9	7.8	1.9	8.9	.21	.973	437	8.8	1488.7
	450	1.0	9.8	2.9	9.3	.31	.935	481	9.4	1489.4
	475	1.1	11.0	4.1	10	.41	891	533	10.1	1490.2
	500	1.2	12.1	5.2	10.8	.48	.854	585	10.7	1490.9
	525	1.3	13.4	6.5	11.6	.56	.806	651	11.5	1491.8
	550	1.4	14.7	7.8	12.3	.63	.756	728	12.4	1492.8
	600	1.7	17.5	10.6	14.4	.74	.66	909	14.4	1495.1
	650	2.0	20.5	13.6	16.8	.81	.516	1128	16.7	1497.7

* Tunnel is upstream of weir
* Orifice is downstream of weir

BY _____ DATE 11/28/79 **BERGER ASSOCIATES** SHEET NO.
CHKD. BY _____ DATE _____ PROJECT
SUBJECT MILLER POND

SPILLWAY RATING CURVE



BY _____ DATE 11/28/79 | BERGER ASSOCIATES | SHEET NO.
CHKD. BY _____ DATE _____ | PROJECT
SUBJECT MILLER POND

EMBANKMENT RATING

$$Q = C L H^{3/2}$$

AT ELEV. 1493.3

$2.7 \times 20 \times (.15)^{1.5} = 3$

$2.7 \times 8 \times (.1)^{1.5} = 1$ $\quad \Sigma = 4$ CFS

AT ELEV 1493.6

$2.7 \times 20 \times (.45)^{1.5} = 16$

$2.7 \times 20 \times (.25)^{1.5} = 7$

$2.7 \times 10 \times (.2)^{1.5} = 2$ $\quad \Sigma = 25$ CFS

AT ELEV 1494.0

$2.7 \times 20 \times (.85)^{1.5} = 42$

$2.7 \times 20 \times (.65)^{1.5} = 28$

$2.7 \times 25 \times (.4)^{1.5} = 17$

$2.7 \times 8 \times (.2)^{1.5} = 2$

$2.7 \times 74 \times (.25)^{1.5} = 25$

$2.7 \times 75 \times (.1)^{1.5} = 6$

$2.7 \times 50 \times (.2)^{1.5} = 12$ $\quad \Sigma = 132$ CFS

AT ELEV 1494.5

$2.7 \times 20 \times (1.35)^{1.5} = 85$

$2.7 \times 20 \times (1.15)^{1.5} = 67$

$2.7 \times 25 \times (.9)^{1.5} = 58$

$2.7 \times 18 \times (.45)^{1.5} = 15$

$2.7 \times 74 \times (.75)^{1.5} = 130$

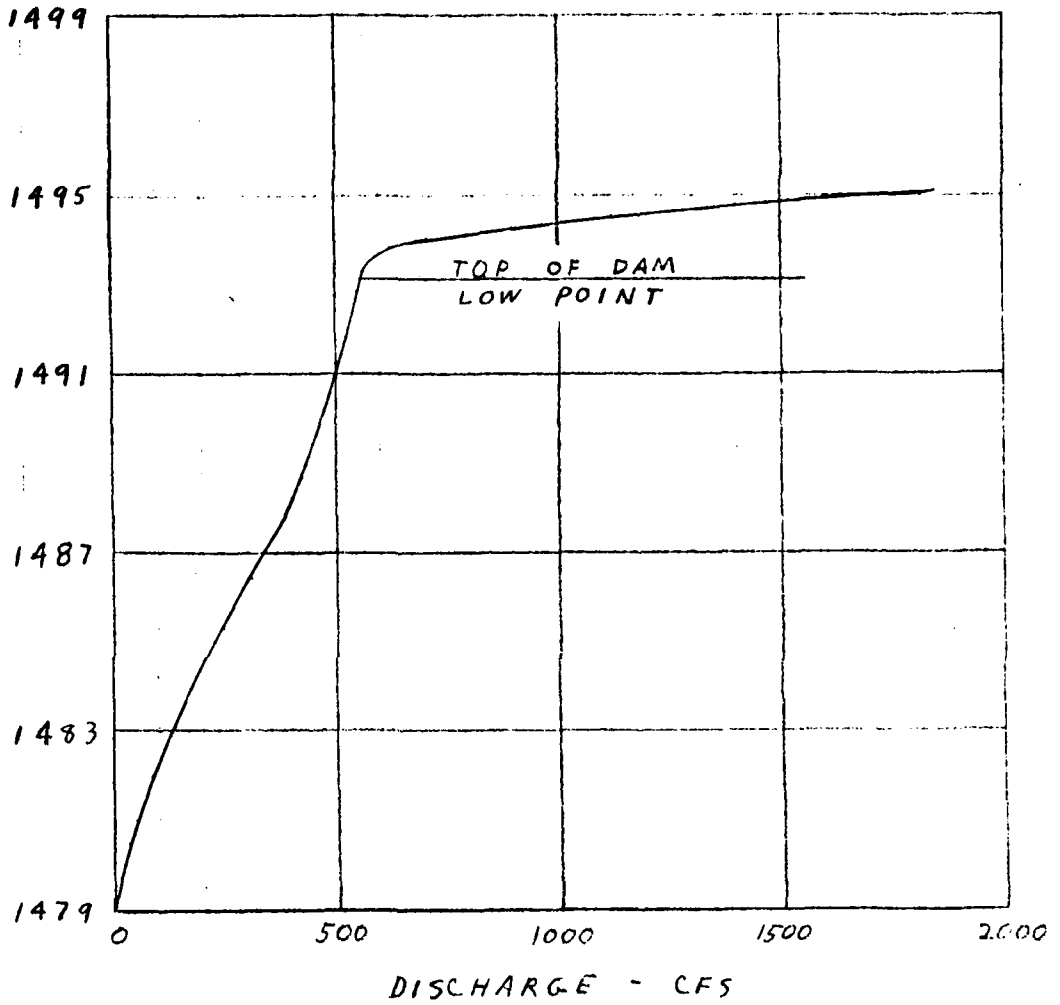
$2.7 \times 75 \times (.6)^{1.5} = 93$

$2.7 \times 50 \times (.7)^{1.5} = 79$

$2.7 \times 6 \times (.5)^{1.5} = 6$ $\quad \Sigma = 533$ CFS

BY _____ DATE 4-29-79 | BERGER ASSOCIATES | SHEET NO.
CHKD. BY _____ DATE _____ | PROJECT
SUBJECT MILLER POND

DISCHARGE RATING CURVE



BY _____ DATE 11-4-24 BERGER ASSOCIATES SHEET NO _____

CHKD. BY _____ DATE _____ PROJECT _____

SUBJECT MILLER POND

SIZE CLASSIFICATION

MAXIMUM STORAGE = 1649 ACRE FEET

MAXIMUM HEIGHT = 25 FEET

SIZE CLASSIFICATION IS INTERMEDIATE

HAZARD CLASSIFICATION

VILLAGE OF WHITES VALLEY LIES ALONG THE DOWNSTREAM CHANNEL.

USE "HIGH"

RECOMMENDED SPILLWAY DESIGN FLOOD

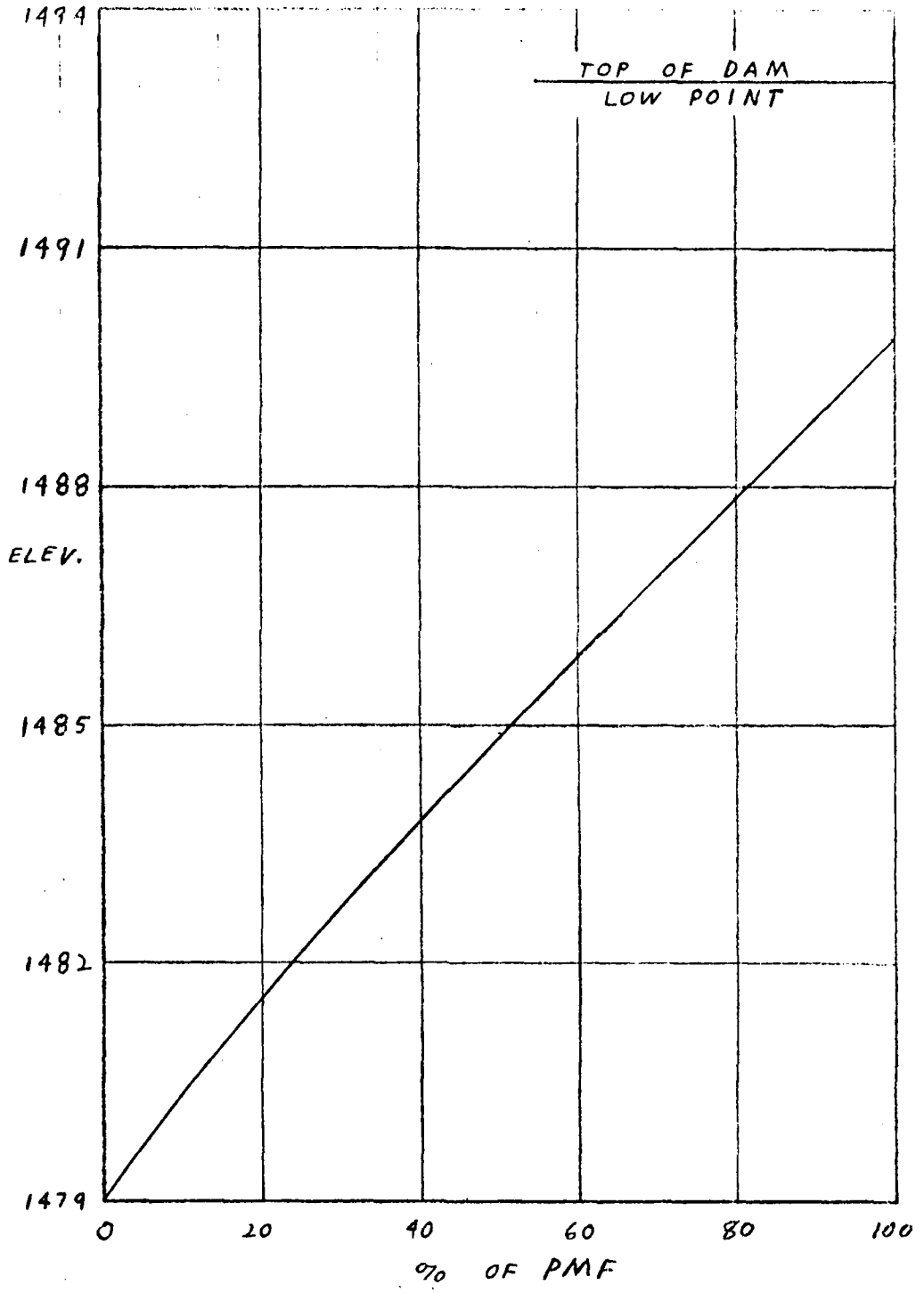
THE ABOVE CLASSIFICATIONS INDICATE USE OF AN SDF EQUAL TO THE PROBABLE MAXIMUM FLOOD.

BY RLS DATE 11/30/79 **BERGER ASSOCIATES** SHEET NO. C

CHKD. BY DATE PROJECT D76

SUBJECT MILLER POND

SPILLWAY CAPACITY



HYDROLOGY AND HYDRAULIC ANALYSIS
DATA BASE

NAME OF DAM: MILLER POND RIVER BASIN: DELAWARE

PROBABLE MAXIMUM PRECIPITATION (PMP) = 21.1 INCHES/24 HOURS[1]

(FOR FOOTNOTES SEE NEXT PAGE)

STATION		1	2	3	4
STATION DESCRIPTION		Miller Pond	Miller Pond Dam		
DRAINAGE AREA (SQUARE MILES)		1			
CUMULATIVE DRAINAGE AREA (SQUARE MILE)		1	1		
ADJUSTMENT OF PMP FOR DRAINAGE AREA (%)[2]	6 HOURS	111	-		
	12 HOURS	123	-		
	24 HOURS	133	-		
	48 HOURS	142	-		
	72 HOURS		-		
SNYDER HYDROGRAPH PARAMETERS	ZONE[3]	1	-		
	C_p / C_t[4]	0.45/1.23	-		
	L (MILES)[5]	1.52	-		
	L_{ca} (MILES)[5]	0.60	-		
	$T_p = C_t (L \cdot L_{ca})^{0.3}$ (hours)	1.20	-		
SPILLWAY DATA	CREST LENGTH (FT.)	-	5		
	FREEBOARD (FT.)	-	14.1		
	DISCHARGE COEFFICIENT	-	3.32		
	EXPONENT	-	1.5		
	ELEVATION	-	1479		
AREA[6] (ACRES)	NORMAL POOL		63.7		
	ELEV. _____		-		
	ELEV. _____		-		
STORAGE (ACRE-FEET)	NORMAL POOL[7]		489		
	ELEV. 1469.1 [7]		0		
	ELEV. 1481.6 [7]		675		
	ELEV 1489.6 [7]		1324		

(1) Hydrometeorological Report 33 (Figure 1), U.S. Army, Corps of Engineers, 1956.

(2) Hydrometeorological Report 33 (Figure 2), U.S. Army, Corps of Engineers, 1956.

(3) Hydrological zone defined by Corps of Engineers, Baltimore District, for determining Snyder's Coefficients (C_p and C_t).

(4) Snyder's Coefficients.

(5) L = Length of longest water course from outlet to basin divide.
L_{ca} = Length of water course from outlet to point opposite the centroid of drainage area.

(6) Planimetered area encompased by contour upstream of dam.

(7) PennDER files.

(8) Computed by conic method.

```
1***********************************
   1              A1      MILLER POND DAM   ****   TRIBUTARY TO JOHNSON CREEK
   2              A2      MOUNT PLEASANT TWP., WAYNE COUNTY, PA.
   3              A3      NDI # PA-00159     PA DER # 64-39
   4              B   300      0      15       0       0       0       0       0      -4       0
   5              B1    5
   6              J     1      9       1
   7              J1    1     .9      .8      .7      .6      .5      .4     .25      .1
   8              K             1                                      1
   9              K1              INFLOW  HYDROGRAPH
  10              M     1       1       1
  11              P           21.1     111     123     133     142
  12              T                                              1     .05
  13              W   1.2     .45
  14              X  -1.5     .05       2
  15              K     1       2                                      1
  16              K1              RESERVOIR  ROUTING
  17              Y                               1
  18              Y1    1                                       489      -1
  19              Y4 1479    1480    1481    1482  1484.2  1486.4  1487.7  1488.7  1490.2  1491.8
  20              Y1492.8  1473.6  1473.8    1474  1484.5  1495.1
  21              Y5    0      17      47      86     186     307     375     425     475     525
  22              Y5  550     593     626     709    1121    1847
  23              $S    0    33.6    98.7   205.6   328.7     489     675     903    1324    1695
  24              $S 2540
  25              $E1469.1 1470.6  1472.6  1474.6  1476.6    1479  1481.6  1484.6  1489.6  1493.6
  26              $E 1500
  27              $$ 1479
  28              $D1493.1
  29              K     99
1                       PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

                              RUNOFF HYDROGRAPH AT          1
                              ROUTE HYDROGRAPH TO           2
                              END OF NETWORK


1**********************************
 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION     JULY 1978
   LAST MODIFICATION  26 FEB 79
 **********************************

 RUN  DATE# 79/11/29.
      TIME# 14.13.55.


                              MILLER POND DAM   ****   TRIBUTARY TO JOHNSON CREEK
                              MOUNT PLEASANT TWP., WAYNE COUNTY, PA.
                              NDI # PA-00159     PA DER # 64-39

                                          JOB SPECIFICATION
                        NQ      NQR     NRTIN     IDAY      IHR     IMIN    METRC     IPLT     IPRT    NSTAN
                       300        0        15        0        0        0        0        0       -4        0
                                                 JOPER      NWT    LROPT    TRACE
                                                     5        0        0        0


                                    MULTI-PLAN ANALYSES TO BE PERFORMED
                                        NPLAN= 1 NRTIO= 9 LRTIO= 1
```

MILLER POND DAM **** TRIBUTARY TO JOHNSON CREEK
MOUNT PLEASANT TWP., WAYNE COUNTY, PA.
NDI # PA-00159 PA DER # 64-39

JOB SPECIFICATION

NQ	NHR	NMIN	IDAY	IHR	IMIN	METRC	IFLT	IFRT	NSTAN
300	0	15	0	0	0	0	0	-4	0
			JOPER	NWT	LROPT	TRACE			
			5	0	0	0			

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 1 NRTIO= 9 LRTIO= 1
RTIOS= 1.00 .90 .80 .70 .60 .50 .40 .25 .10

********** ********** ********** ********** **********

SUB-AREA RUNOFF COMPUTATION

INFLOW HYDROGRAPH

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	1.00	0.00	1.00	0.00	0.000	0	0	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	21.10	111.00	123.00	133.00	142.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS .800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	.05	0.00	0.00

UNIT HYDROGRAPH DATA
TP= 1.20 CP= .45 NTA= 0

RECESSION DATA
STRTQ= -1.50 QRCSN= .05 RTIOR= 2.00

UNIT HYDROGRAPH 44 END-OF-PERIOD ORDINATES, LAG= 1.21 HOURS, CP= .45 VOL= 1.00

20.	74.	146.	209.	241.	232.	203.	178.	157.	137.
121.	106.	93.	81.	71.	63.	55.	48.	42.	37.
33.	29.	25.	22.	19.	17.	15.	13.	11.	10.
9.	8.	7.	6.	5.	5.	4.	4.	3.	3.
2.	2.	2.	2.						

0 END-OF-PERIOD FLOW

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q

SUM 23.97 21.59 2.38 55455.
(609.)(548.)(61.)(1570.31)

RESERVOIR ROUTING

ISTAO	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
2	1	0	0	0	0	1	0	0

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	0	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	487.	-1

STAGE	1479.00	1480.00	1481.00	1482.00	1484.20	1486.40	1487.70	1488.70	1490.20	1491.8
	1492.80	1493.60	1493.80	1494.00	1494.50	1495.10				
FLOW	0.00	17.00	47.00	86.00	186.00	307.00	375.00	425.00	475.00	525.0
	550.00	593.00	626.00	709.00	1121.00	1847.00				
CAPACITY=	0.	34.	99.	206.	329.	489.	675.	903.	1324.	1695.
	2540.									
ELEVATION=	1469.	1471.	1473.	1475.	1477.	1479.	1482.	1485.	1490.	1494.
	1500.									

CREL	SPWID	COOW	EXPW	ELEVL	COOL	CAREA	EXPL
1479.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COOD	EXPD	DAMWID
1493.1	0.0	0.0	0.

PEAK OUTFLOW IS 463. AT TIME 45.50 HOURS

PEAK OUTFLOW IS 430. AT TIME 45.50 HOURS

PEAK OUTFLOW IS 383. AT TIME 45.50 HOURS

PEAK OUTFLOW IS 332. AT TIME 45.50 HOURS

PEAK OUTFLOW IS 279. AT TIME 45.50 HOURS

PEAK OUTFLOW IS 225. AT TIME 45.75 HOURS

PEAK OUTFLOW IS 170. AT TIME 45.75 HOURS

PEAK OUTFLOW IS 93. AT TIME 46.00 HOURS

PEAK OUTFLOW IS 27. AT TIME 47.00 HOURS

********** ********** ********** ********** **********

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS								
				RATIO 1	RATIO 2	RATIO 3	RATIO 4	RATIO 5	RATIO 6	RATIO 7	RATIO 8	RATIO 9
				1.00	.90	.80	.70	.60	.50	.40	.25	.10
HYDROGRAPH AT	1	1.00	1	2504.	2253.	2003.	1753.	1502.	1252.	1001.	626.	250.
	(	2.59)	(	70.89)(	63.81)(	56.72)(	49.63)(	42.54)(	35.45)(	28.36)(	17.72)(	7.09)
ROUTED TO	2	1.00	1	463.	430.	383.	332.	279.	225.	170.	93.	27.
	(	2.59)	(	13.12)(	12.18)(	10.85)(	9.40)(	7.90)(	6.36)(	4.80)(	2.61)(	.77)

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

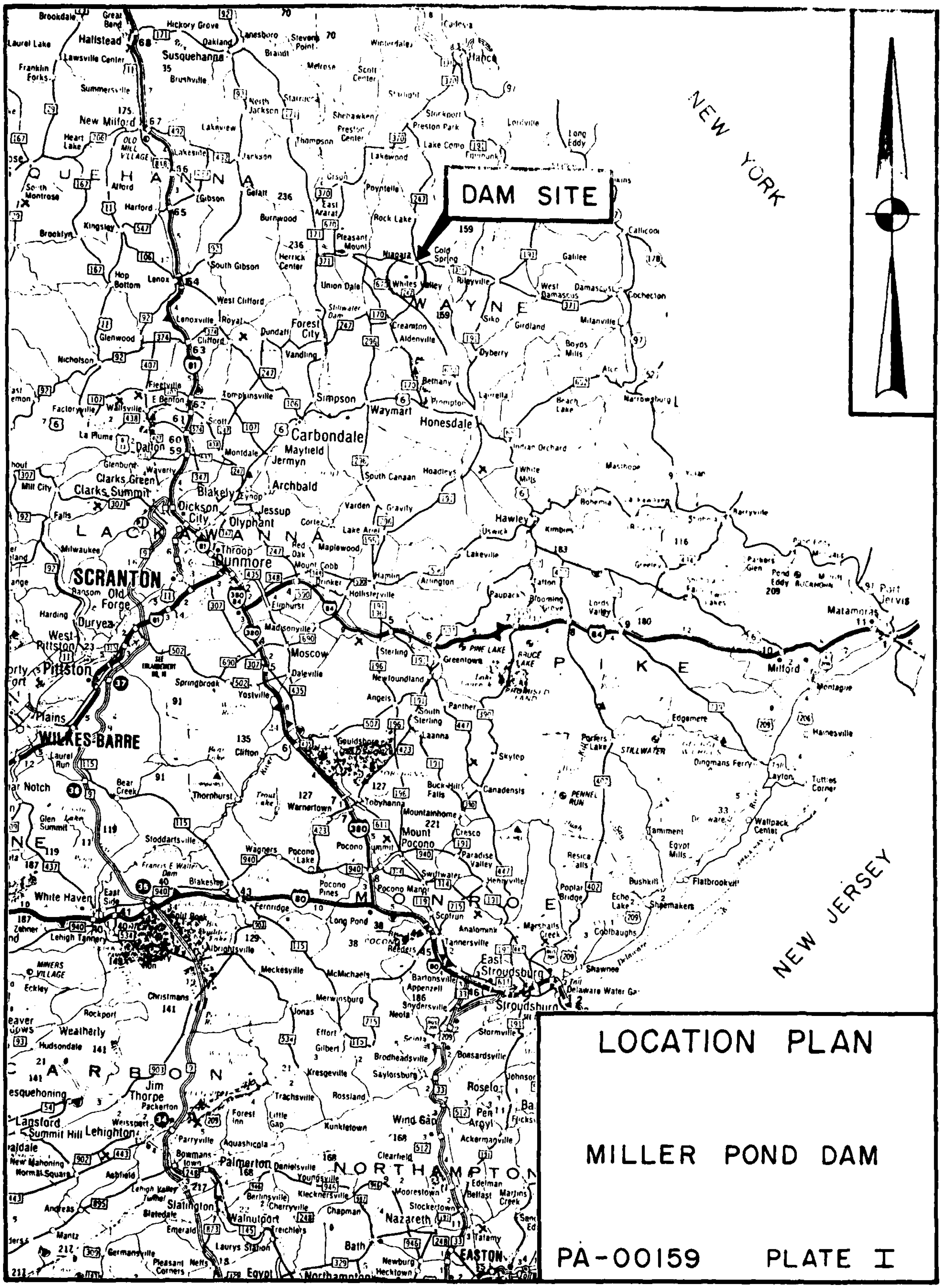
	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1479.00	1477.0	1493.10
STORAGE	489.	489.	1647.
OUTFLOW	0.	0.	566.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1489.85	0.00	1347.	463.	0.00	45.50	0.00
.90	1488.85	0.00	1261.	430.	0.00	45.50	0.00
.80	1487.86	0.00	1178.	383.	0.00	45.50	0.00
.70	1486.87	0.00	1094.	332.	0.00	45.50	0.00
.60	1485.87	0.00	1012.	279.	0.00	45.50	0.00
.50	1484.90	0.00	929.	225.	0.00	45.75	0.00
.40	1483.94	0.00	847.	170.	0.00	45.75	0.00
.25	1482.16	0.00	717.	93.	0.00	46.00	0.00
.10	1480.34	0.00	585.	27.	0.00	47.00	0.00

EOI ENCOUNTERED.

APPENDIX E

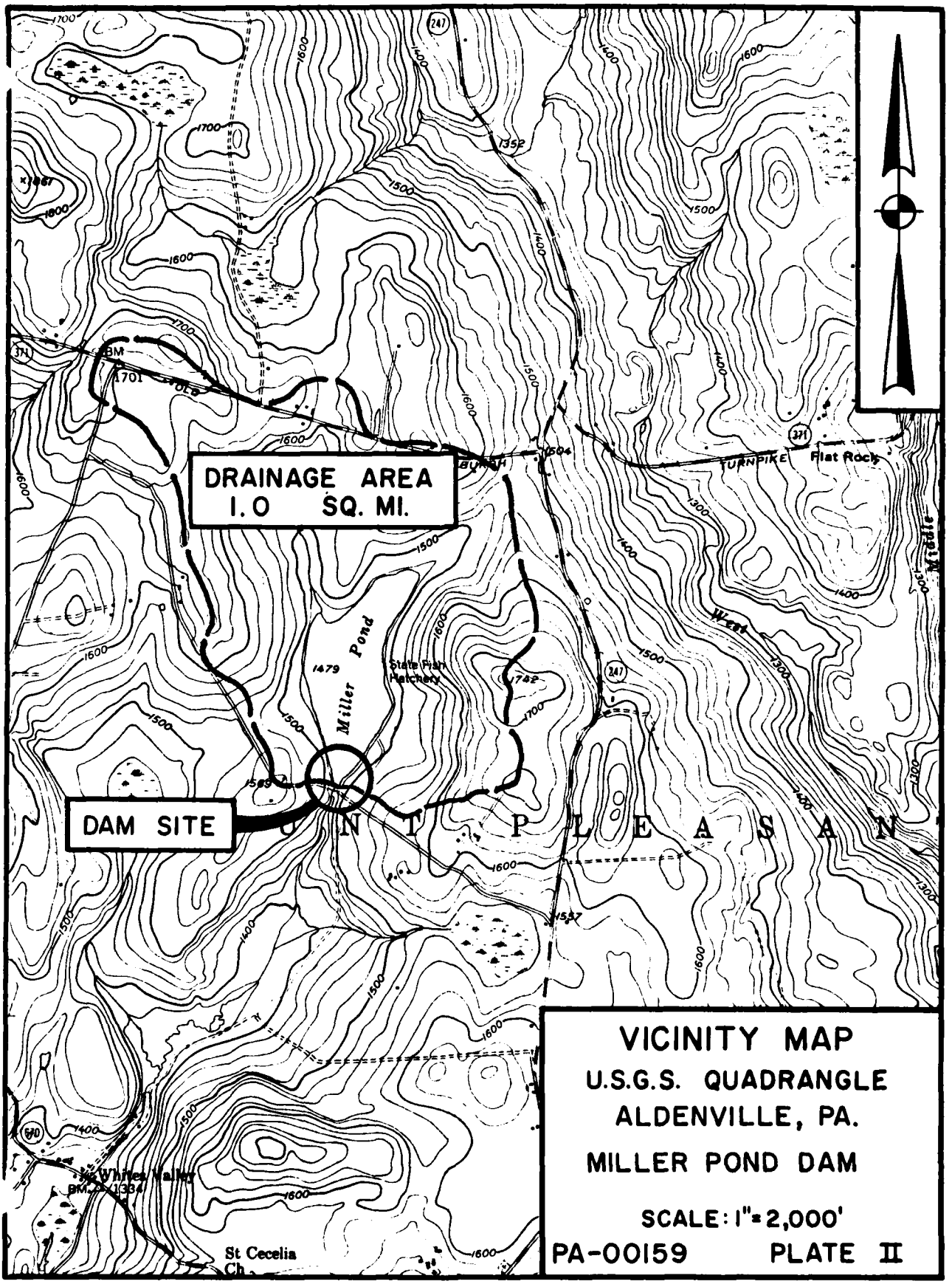
PLATES

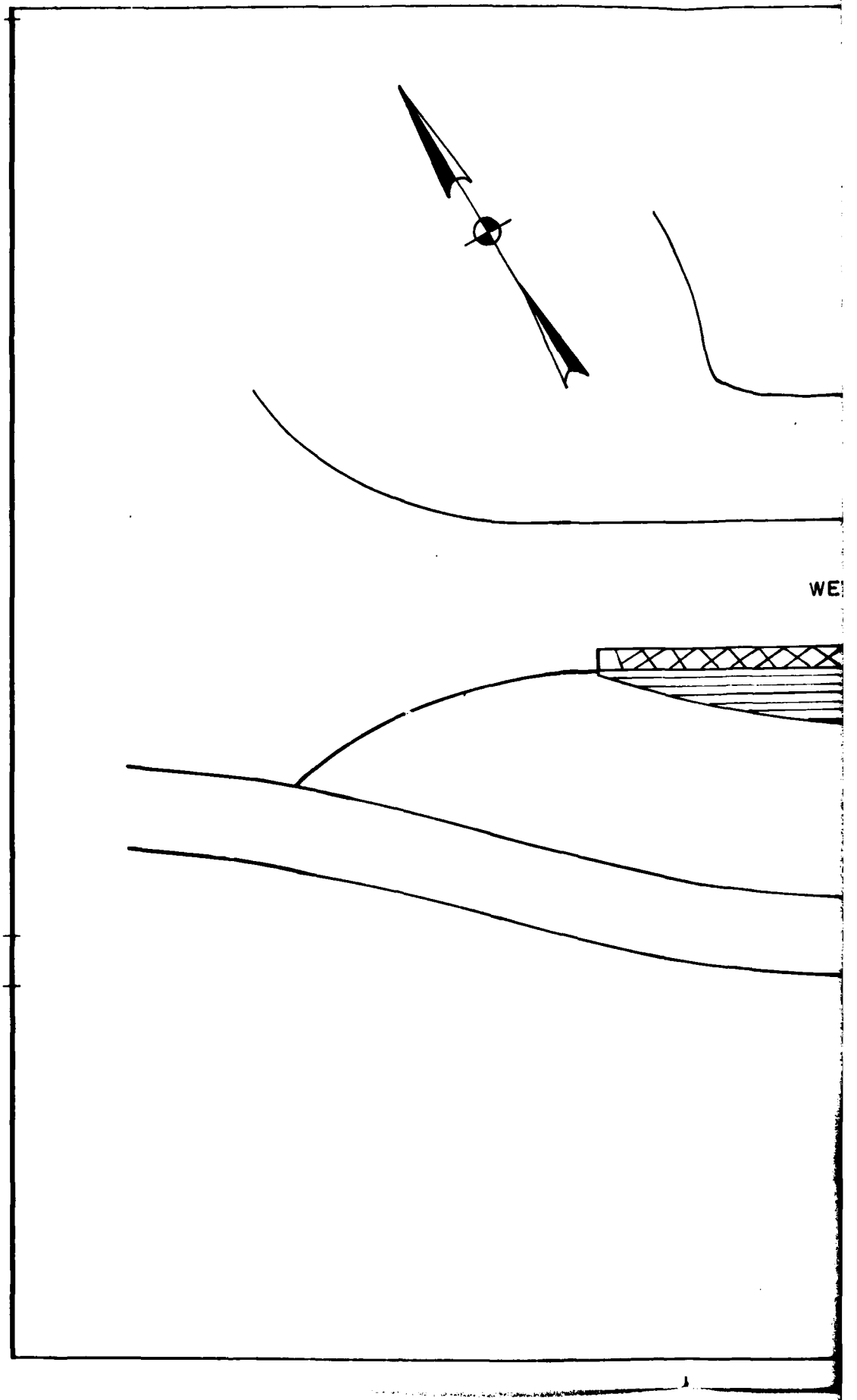


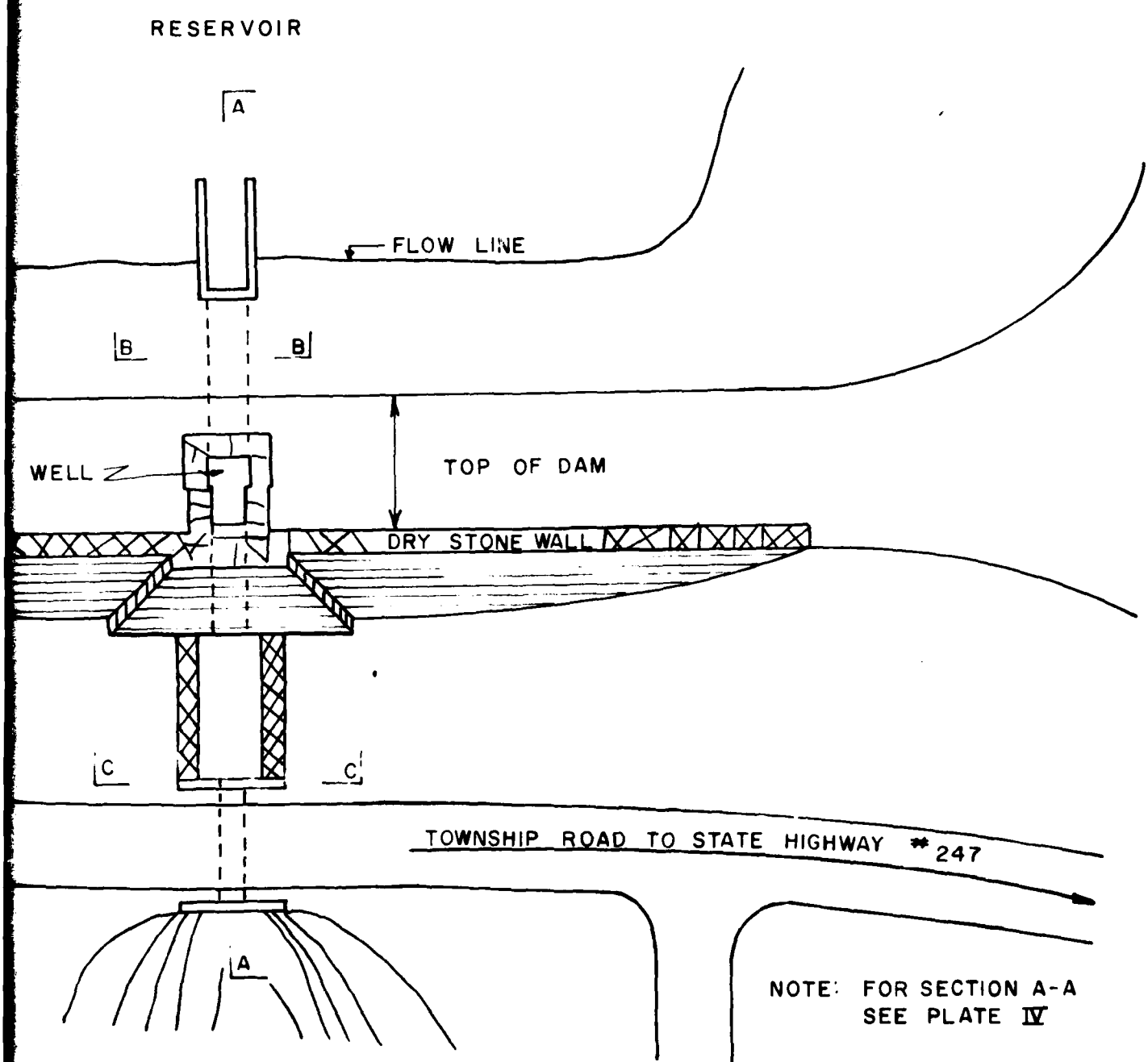
LOCATION PLAN

MILLER POND DAM

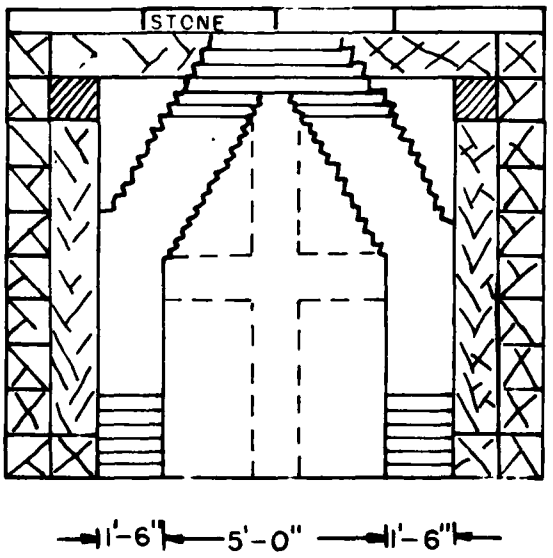
PA-00159 PLATE I


DRAINAGE AREA
1.0 SQ. MI.
DAM SITE
Miller Pond
State Fish Hatchery
BENCH
TURNPIKE
Flat Rock
West
UNTAPLEASAN
White Valley
St Cecelia
Ch
VICINITY MAP
U.S.G.S. QUADRANGLE
ALDENVILLE, PA.
MILLER POND DAM
SCALE: 1" = 2,000'
PA-00159 PLATE II

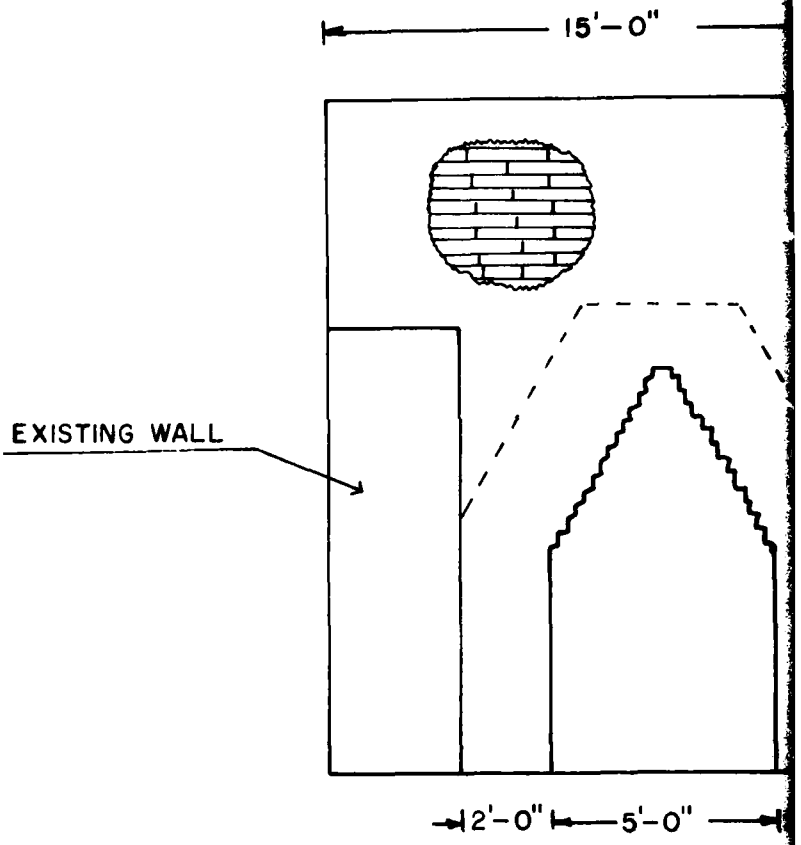

WE



SCHEMATIC PLAN
SCALE 1"= 20'-0"



SECTION B-B SCALE 1/4"=1'



SECTION C-C

MILLE
WA
GENE

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NOVEMBER 1979

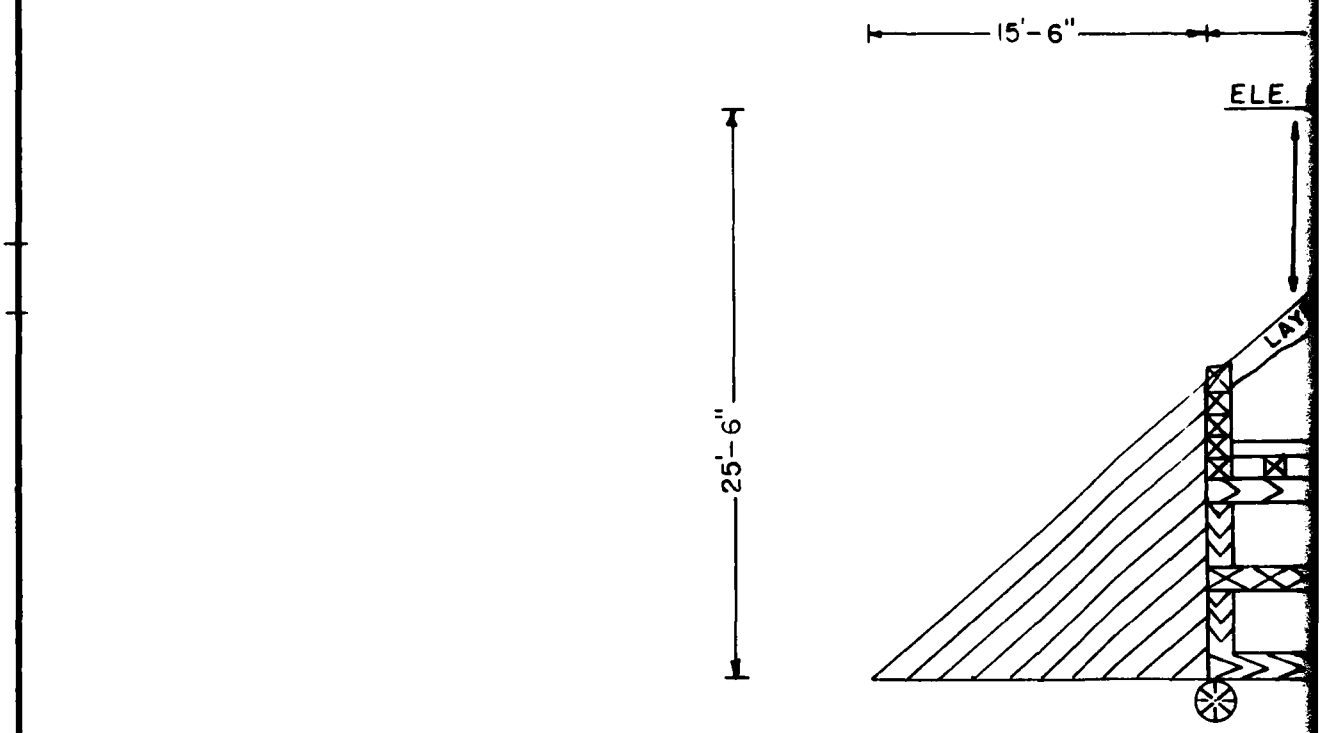
PA.-0

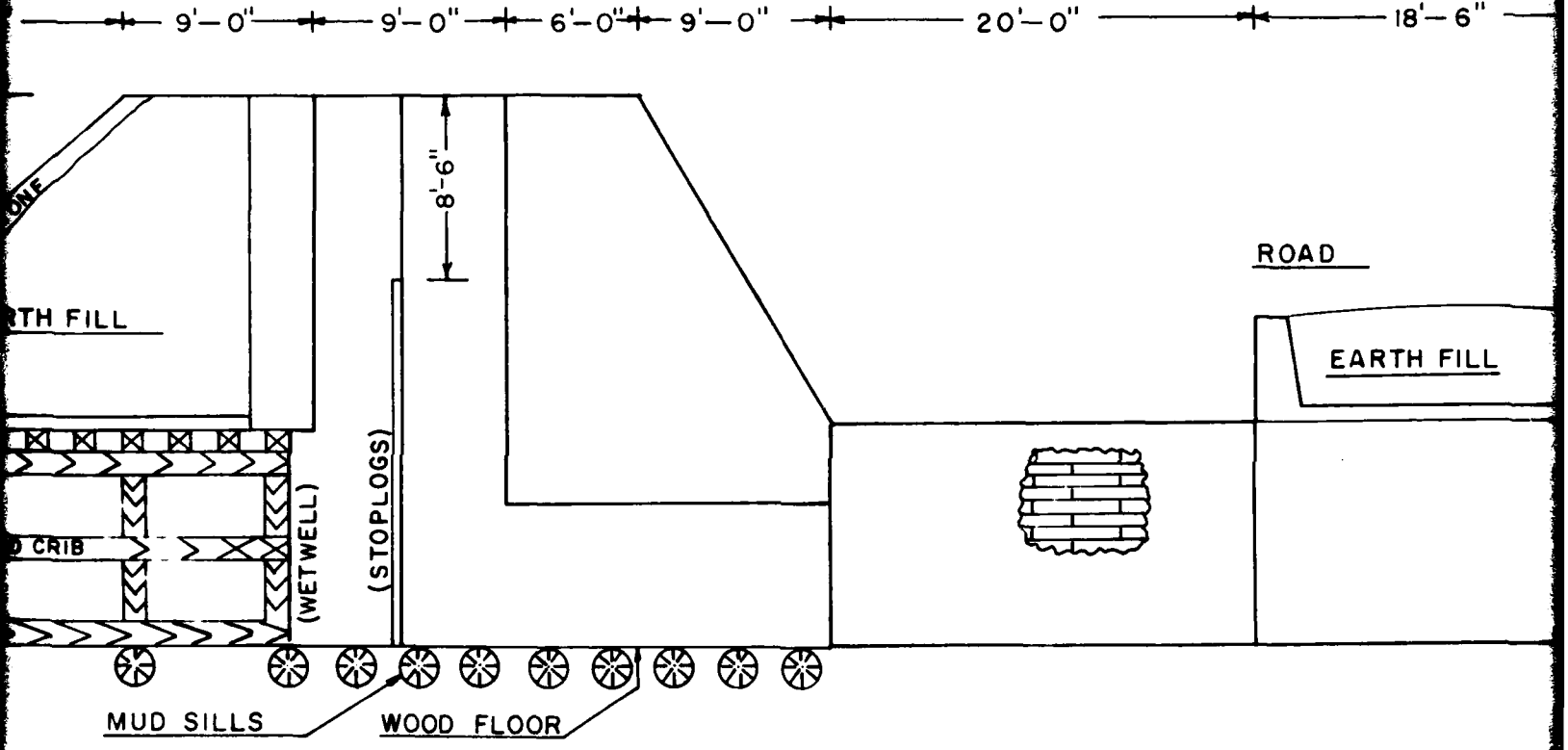
E 1/4"=1'

ND DAM
COUNTY

PLAN

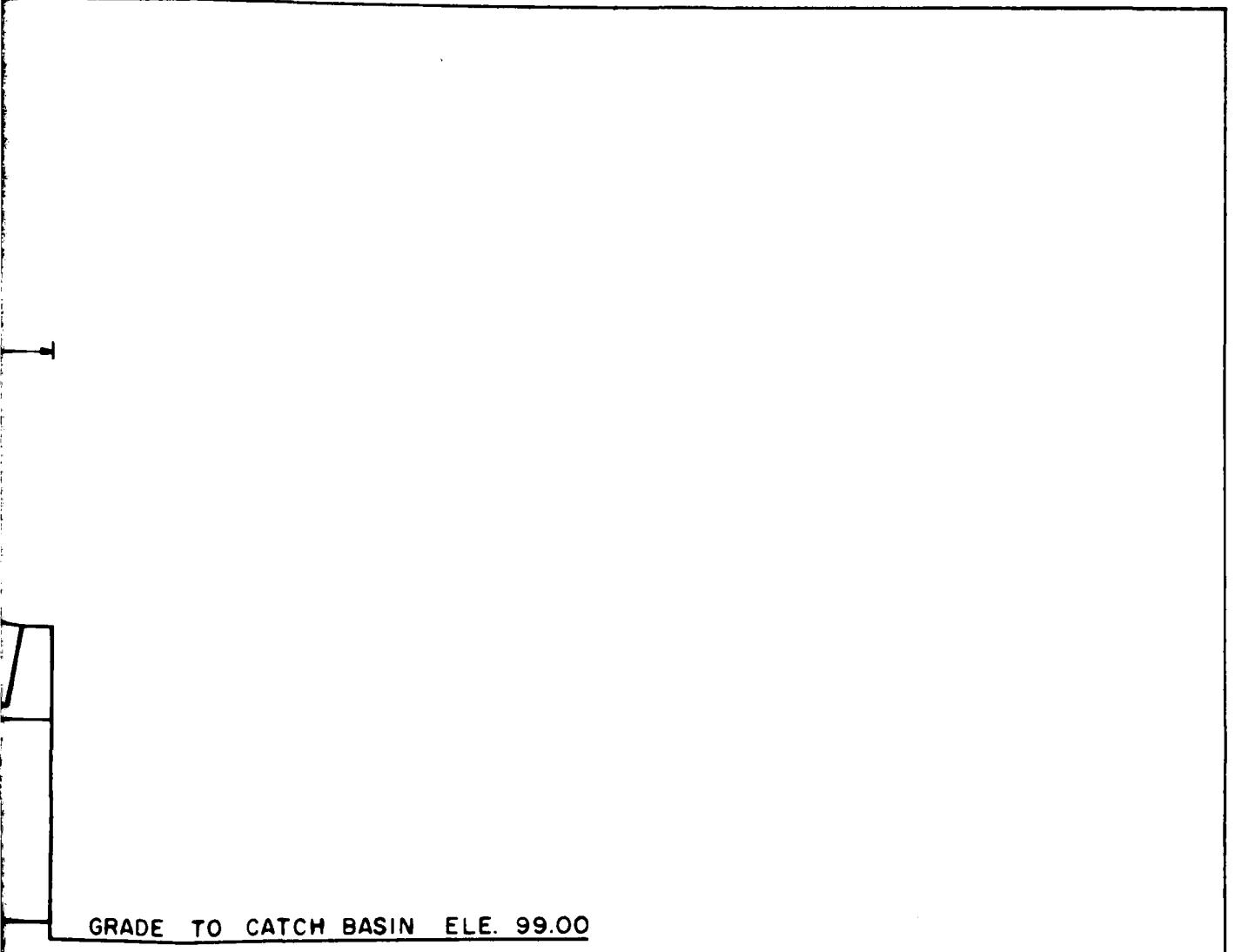
PLATE III


15'-6"
ELE.
25'-6"
LAY



TION A-A SCALE 1/8"=1'

( ) INDICA
By BE



MILLER POND DAM

WAYNE COUNTY

SLUICE WAY SECTION

DIT
SSOCIATES

TRACED BY BERGER ASSOC. INC.
NOVEMBER 1979

PA.-00159 PLATE IV

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APPENDIX F

GEOLOGIC REPORT

GEOLOGIC REPORT

Bedrock - Dam and Reservoir

Formation Name: Catskill Formation.

Lithology: Dark grayish-red to reddish brown shale and siltstone interbedded with greenish-gray to grayish red medium grained sandstone, with some gray coarse grained sandstone. Grains of sandstones are cemented primarily with clay, iron oxides and micas. Very little carbonate present except in rare conglomeratic beds.

Structure

The area is located in the Pocono Plateau and the beds here are essentially horizontal. Regional dip is probably toward the Lackawanna syncline, located several miles to the west.

Air Photo fracture traces trend; N5°W, N65°E, and N85°E.

Overburden

No drilling or other data concerning the overburden at this dam site are available. The area is within the limits of Pleistocene glaciation and variable thicknesses of ground moraine and outwash deposits can be expected. Although outcrops on the hill east of the pond are clearly visible on the air photographs, none are seen in the vicinity of the dam.

The stream valleys usually contain at least some sand and gravel outwash deposits.

Aquifer Characteristics

The Catskill Formation consists of essentially impermeable rocks. Ground water movement is entirely on bedding planes and fractures. The most permeable aquifers in the area are the sands and gravels in the stream valleys. In the smaller valleys, such as this one, the sediments tend to be very lenticular and continuous zones of high permeability are not common.

Discussion

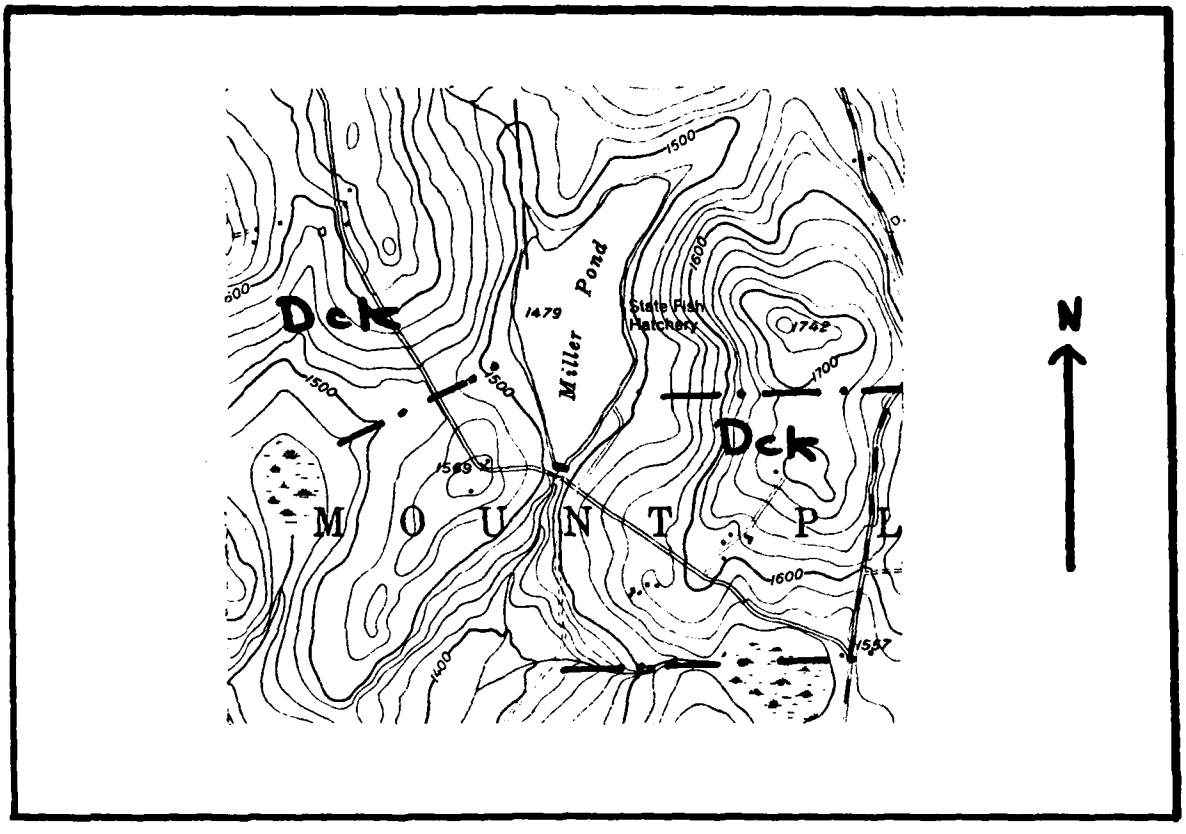
This dam was built by the Delaware and Hudson Canal Co., probably in the 1830's, and no foundation information is available. It is unlikely that the foundation was excavated to fresh bedrock, and the dam probably rests on till, which is relatively impermeable.

Sources of Information

1. Manuscript Geologic Map of the Aldenville Quadrangle, in open file, Pa. Geologic Survey, Harrisburg, Pa.

2. Air Photos. Scale: 24,000, dated 1969.

GEOLOGIC MAP - Miller Pond Dam



key

Dck	Catskill Fm. - undifferentiated
—·—·	air photo fracture trace

SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET